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Automated Vehicles: Analysis of Responses to Consultation Paper 2



Analysis of Responses to LCCP No 245/SLCDP No 169

20 May 2020



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Abbreviations

ABI: Association of British Insurers.

ADS: Automated Driving System.

ADSE: Automated Driving System Entity.

AEV Act: Automated and Electric Vehicles Act 2018.

ALBUM: Association of Local Bus Company Managers.

APIL: Association of Personal Injury Lawyers.

AID GmbH: Autonomous Intelligent Driving GmbH.

BIBA: British Insurance Brokers' Association.

BPA: British Parking Association.

BSI: British Standards Institution.

BVRLA: British Vehicle Rental and Leasing Association.

CAV: Connected and Autonomous Vehicle.

CCAV: Centre for Connected and Autonomous Vehicles.

CIHT: Chartered Institution of Highways and Transportation.

CMA: Competition and Markets Authority.

CPS: Crown Prosecution Service.

CPT: Confederation of Passenger Transport UK.

CP1: Consultation Paper 1.

CP2: Consultation Paper 2.

DfT: Department for Transport.

DPTAC: Disabled Persons Transport Advisory Committee.

DVLA: Driving and Vehicle Licensing Agency.

DVSA: Driver and Vehicle Standards Agency.

EHRC: Equality and Human Rights Commission.

ENCTS: English National Concessionary Travel Scheme.

FTA: Freight Transport Association.

GDPR: General Data Protection Regulation (EU) 2016/679.

GPSR: General Product Safety Regulations 2005.

HARPS: Highly Automated Road Passenger Service.

IDAG: Independent Disability Advisory Group.

IHE: Institute of Highway Engineers.

ITS: Intelligent Transport Systems.

IUA: International Underwriting Association of London.

LAF: Mid and West Berkshire Local Access Forum.

LGA: Local Government Association.

MaaS: Mobility as a Service.

MACS: Mobility and Access Committee for Scotland.

MiDAS: Minibus Driver Awareness Scheme.

MIT: Massachusetts Institute of Technology.

MPS: Metropolitan Police Service.

NIS: Network and Information Systems Regulations 2018.

NPCC: National Police Chiefs Council.

ODD: Operational Design Domain.

OEM: Original Equipment Manufacturer.

PACTS: Parliamentary Advisory Council for Transport Safety.

PHV: Private Hire Vehicle.

PSV: Public Service Vehicle.

PSVAR: Public Service Vehicles Accessibility Regulations 2000 (SI 2000 No. 1970).

P2P: Peer-to-peer.

RHA: Road Haulage Association.

RoSPA: Royal Society for the Prevention of Accidents.

RTRA: Road Traffic Regulation Act 1984.

SAE: Society of Automotive Engineers International.

SAPT: Scottish Association for Public Transport.

SMMT: Society of Motor Manufacturers and Traders.

STUC: Scottish Trades Union Congress.

TfGM: Transport for Greater Manchester.

TfL: Transport for London.

TfWM: Transport for West Midlands.

TRO: Traffic Regulation Order.

UKAEA: United Kingdom Atomic Energy Authority.

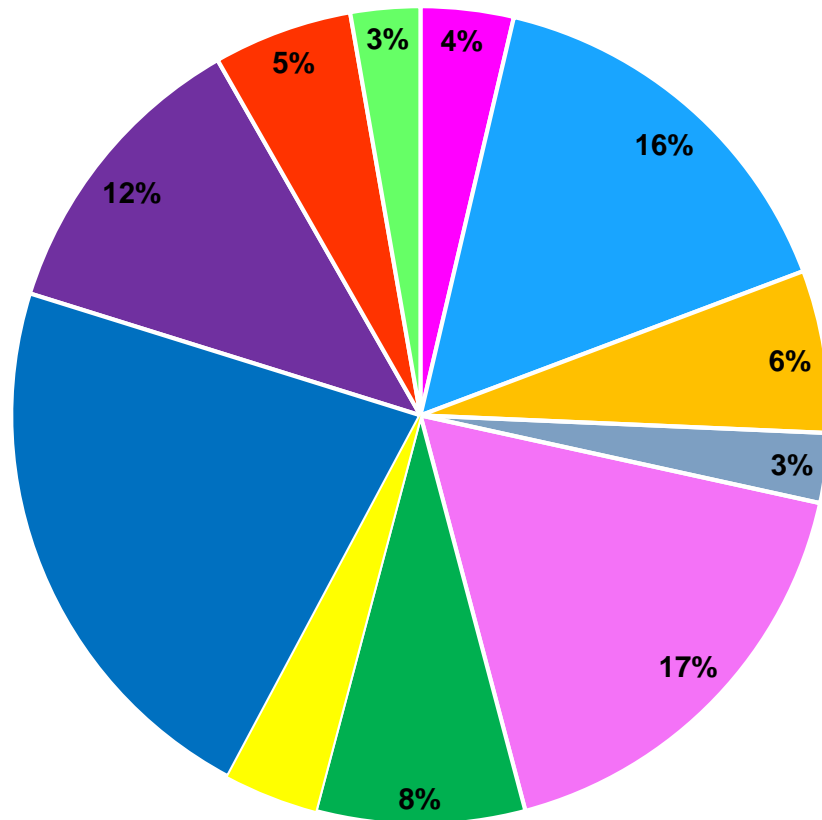
Chapter 1: Introduction

- 1.1 The Law Commission of England and Wales and the Scottish Law Commission are conducting a three-year review to prepare driving laws for self-driving vehicles.
- 1.2 Our first consultation (Consultation Paper 1) focussed on safety assurance together with civil and criminal liability. On 16 October 2019, we published our second consultation (Consultation Paper 2), which looked at how passenger-only automated vehicles might be used to supply passenger transport services to the public. Our aim is to ensure that these services are safe and are used to meet the objectives set by local and central Government. This document presents an analysis of the responses to Consultation paper 2.
- 1.3 We received 109 responses to Consultation Paper 2 from a wide range of consultees. We have summarised the key themes emerging from the responses and identified the major issues highlighted in each chapter.
- 1.4 We are very grateful to all of those who responded to our paper. In all we received over 1,300 pages of discussion. With so much material to work with we are often only able to present a few phrases or sentences of a response in this summary - enough to give a mere flavour of the debate. It has not been possible to quote all the points made. We have therefore published the responses in full on our website. Throughout this document readers are referred to the original documents for more detail.

WHO RESPONDED TO THE PAPER?

- 1.5 The pie chart overleaf shows the variety of consultees who responded to the paper. All consultees are listed in Annex 1.
 - (1) The four largest groups of respondents were: research, consultancy and professional organisations (22%); legal professionals (17%); OEMs, developers and operators (16%); and safety and road user groups (12%).
 - (2) We also received responses from local representative groups (8%), disability groups (6%), insurance organisations (5%), academics (4%), public sector organisations (4%), emergency services (3%) and individuals (3%).
- 1.6 The specialist nature of this consultation was most markedly reflected in the lower proportion of individuals responding (dropping from 17% for Consultation Paper 1, to 3% for Consultation Paper 2).

Respondents by category



- Academics
- OEMS, developers and operators
- Disability groups
- Emergency services and police
- Legal
- Local government, highway authorities and local representative groups
- Public sector
- Research, consultancy and professional organisations
- Safety and road user groups
- Insurance
- Individuals

NEXT STEPS

- 1.7 We intend to publish a third consultation paper later in 2020 which will consider the safety assurance scheme for automated vehicles, corporate liability and other issues such as access to data. Our aim is that Consultation Paper 3 will include detailed proposals, leading to our final report with recommendations on all issues in 2021.

Chapter 2: Key themes

- 2.1 Consultation Paper 2 discussed Highly Automated Road Passenger Services, or “HARPS”. We coined this term to convey the idea of a new service which uses highly automated vehicles to supply road journeys to passengers without a human driver or user-in-charge.¹ Vehicles used for such services would be capable of travelling empty or with only passengers on board.

HARPS AS A NEW SERVICE

- 2.2 We described HARPS as a new form of service, sufficiently different from current passenger services to warrant a new regulatory structure. We did not think that HARPS could easily be shoehorned into the existing regulatory structures which apply to taxis, private hire and public service vehicles. For these reasons, in Chapters 3 and 4 of the consultation we outlined a new, separate system of HARPS operator licensing.
- 2.3 The operator licensing scheme would be in addition to the safety assurance scheme proposed in our first consultation, which focussed on the design of the automated driving system (ADS). In Consultation Paper 1, we proposed that each ADS would be put forward for authorisation by an Automated Driving System Entity (ADSE) to vouch for its safety. The HARPS operator licensing scheme would sit alongside the safety assurance scheme. The ADSE would be responsible for the software which determined dynamic driving decisions. The HARPS operator would be responsible for insuring, maintaining and supervising the vehicle and for offering the service to the public.
- 2.4 In Chapter 5 we discussed the possibility that some passenger-only vehicles may be personal vehicles, owned by individuals who have exclusive access to them. We considered who would be responsible for insuring, maintaining and supervising such vehicles.

ACHIEVING TRANSPORT OBJECTIVES

- 2.5 The regulatory regime must also promote services that benefit society more generally. In Chapter 2, we analysed a variety of local transport plans and strategies and highlighted common themes. All the documents we looked at emphasised the need to combat climate change, improve air quality and encourage social inclusion. They aimed to reduce the congestion caused by car dependency and move towards mass transit, active travel² and healthy streets.
- 2.6 We then set out two different scenarios for how HARPS might affect these goals. In the positive vision, we described how HARPS could reduce car dependency by offering flexible, accessible alternatives. Properly managed, HARPS would feed into an

¹ In Consultation Paper 1 (CP1) we proposed a new category of user of a highly automated system. Their main role would be to operate the vehicle upon exiting the system’s operational design domain. They would also have certain other positive obligations in respect of vehicle maintenance and insurance. The user-in-charge would not be a driver but must be qualified and remain fit to drive whilst the vehicle is driving itself.

² Principally walking and cycling.

integrated transport system which used mass transit (such as trains and buses) to reduce congestion. Less car ownership would reduce on-street parking, freeing space for cycle lanes and healthy streets.

- 2.7 By contrast, the negative view looked at potential risks. For example, if it became cheaper to travel than to park, too many vehicles might cruise empty around urban streets, increasing congestion and undermining bus and train services. Also, without a human driver to help, HARPS might undermine access for disabled and older people.
- 2.8 Our aim was to design a regulatory regime which facilitated the benefits and guarded against the risks. Therefore, in Chapter 6 we considered access for disabled and older people. In Chapter 7 we discussed regulatory tools to control congestion and empty cruising. Finally, in Chapter 8 we considered how HARPS may be integrated with mass transit.

Transport objectives and recent events

- 2.9 Since consultation closed in February 2020, the UK has entered a period of lockdown to combat the global COVID-19 emergency. This has transformed many aspects of society, including our streets. Although it is too early to understand the long-term effects, we have considered how some of the changes brought about by COVID-19 might affect the issues addressed in our paper.

An unpredictable future

- 2.10 The first, overwhelming, theme is that the future is unpredictable. Many of the responses we receive emphasised how uncertain the future has become, and how regulation must be sufficiently flexible to deal with a wide variety of eventualities. Since February 2020, these uncertainties have been amplified.

Less travel

- 2.11 Secondly, the emergency may have accelerated existing trends. In Consultation Paper 2 we noted that people were travelling less, as communications technology led to more home working and more online shopping.³ In 2019 this was a slow trend. Now that so many people have much greater experience of homeworking and online shopping, some of these habits seem likely to endure after the lockdown ends. One possible long-term outcome is less travel overall, with knock-on benefits for congestion, air quality and climate change.
- 2.12 What are the implications of less travel for car ownership? In Consultation Paper 2 we highlighted that even though people made fewer trips, car ownership continued to increase. Many people feel that they must have a car, because at least some of the journeys they undertake cannot be made in any other way. The Government Office of Science noted that many low-income households undergo “car-related economic stress”, because they feel that they have no alternative than to own a car, with the considerable upfront costs that involves.⁴ And once households have met these up-

³ Consultation Paper 2 (CP2), para 2.46.

⁴ Government Office for Science, *Future of Mobility* (January 2019), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/780868/future_of_mobility_final.pdf, p 64.

front costs, they often use the car in preference to public transport. One reason for this is that the upfront costs have already been paid and the additional costs of any given car trip are (or seem) lower than the alternative.

- 2.13 At present, those who do not own a car often rely on taxis, private hire vehicles and rented cars for trips which cannot be made in any other way. But taxis and private hire vehicles are expensive, while car rentals can be inconvenient, especially if consumers have to pick up and drop off the car. We said that the ability to summon a HARPS to one's door, cheaply and efficiently whenever it is needed, would transform the current pressures towards car dependency.
- 2.14 The pressures towards car dependency mean that less travel does not necessarily equate to less car ownership. And once people own cars, they will tend to use them in preference to the alternatives. However, as people travel less, there will come a tipping point at which households decide they no longer need to own a car. The better, cheaper and more convenient the alternatives, the more quickly this point will be reached.
- 2.15 For most journeys the aim must be to provide low-carbon alternatives, such as active travel and mass transit. However, there will always be a few essential trips which require smaller, more individualised vehicles. Easing people away from cars will require a wide range of alternatives and HARPS have the potential to be an important part of this mix.

A renewed impetus towards improved air quality

- 2.16 The COVID-19 emergency has led to greater awareness of threats to public health. In 2018, Public Health England (PHE) described poor air as “the largest environmental risk to public health in the UK”.⁵ It estimated that long term exposure to man-made air pollution leads to 28,000 to 36,000 premature deaths a year, mainly through cardiovascular and respiratory diseases and lung cancer. Air pollution can weaken a person's lungs and respiratory system throughout their lives. For children it causes lungs to develop more slowly and increases the risk of asthma. PHE also observed that:

*Lung function in adulthood slowly declines with age, and there is emerging evidence that air pollution and living near a busy road accelerate this decline, for both adults and older people.*⁶

- 2.17 Although it is too early to be sure, recent studies suggest a possible link between air pollution and COVID-19 mortality.⁷
- 2.18 The lockdown measures have shown what clean, healthy streets look like. This is likely to lead to an increased focus on redesigning streets to reduce car use and increase

⁵ PHE, *Guidance Health matters: air pollution* (November 2018), <https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution>.

⁶ PHE, *Guidance Health matters: air pollution* (November 2018), <https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution>, para 2.2.

⁷ See, for example, Xiao Wu, Rachel C. Nethery and others, “Exposure to air pollution and COVID-19 mortality in the United States: A nationwide cross-sectional study”, Harvard University (April 2020), <https://projects.iq.harvard.edu/covid-pm>.

facilities for cyclists and pedestrians, both in Britain⁸ and in other European cities.⁹ We would anticipate (and hope) that this is part of a long-term trend towards giving greater priority to active travel.¹⁰

- 2.19 In Consultation Paper 2 we noted that the average car in the UK is parked 96% of the time. HARPS could be used much more intensively, helping reclaim space currently ceded to parking. The freed space could then be used to encourage cycling and walking (for example through cycle lanes, green space, seating and points of interest).

Decarbonisation

- 2.20 There has also been a renewed emphasis on decarbonisation. In March 2020, the Department for Transport (DfT) committed itself to developing an ambitious plan by November 2020 to accelerate the decarbonisation of transport.¹¹ There are many strands to this work, including completing a transition to zero emission road vehicles by 2035. This will involve the supply of new electric vehicles and major changes to the refuelling and recharging infrastructure.
- 2.21 It is important that automation goes hand in hand with electrification. Between them they have the potential to transform road transport infrastructure.

Concerns about ride-sharing

- 2.22 In the Consultation Paper we drew attention to the potential of ride-sharing to reduce congestion. We noted how new technology allows vehicles to alter routes in response to demand from other passengers and cited the examples of Uber-pool and the Oxford Bus Company's PickMeUp minibus service. However, many consultees expressed strong concerns about ride-sharing in the absence of human driver and how it would affect vulnerable people. For example, the Disabled Persons Transport Advisory Committee commented that disabled people in particular "may perceive these HARPS services as places of risk and perhaps restrict their own use of them".

⁸ Some UK local authorities have already reacted to changes in road use during the pandemic. Brighton and Hove City Council recently closed a major seafront thoroughfare to motor traffic, permitting use only by those on bicycles or on foot. "Madeira Drive first road to be allocated for walkers and cyclists" (17 April 2020), <https://new.brighton-hove.gov.uk/news/2020/madeira-drive-first-road-be-allocated-walkers-and-cyclists>. See also Edinburgh City Council, "Creating Safe Spaces for Walking and Cycling" (14 May 2020) <https://democracy.edinburgh.gov.uk/documents/s24012/Item%206.8%20-%20Creating%20Safe%20Spaces%20for%20Walking%20and%20Cycling.pdf>.

⁹ See for example: Paris Has a Plan to Keep Cars Out After Lockdown (29 April 2020), <https://www.citylab.com/transportation/2020/04/paris-cars-air-pollution-health-public-transit-bike-lanes/610861/>. See also: Coronavirus: Urban planners across Europe reclaim the streets from cars during lockdown (22 April 2020), <https://inews.co.uk/news/coronavirus-urban-planners-europe-reclaim-streets-brussels-milan-lockdown-2546948>.

¹⁰ DfT has announced a £2 billion package to encourage greater use of cycling and walking and has issued statutory guidance advising local authorities to reallocate road space for significantly-increased numbers of cyclists and pedestrians, See "Transport Secretary's statement on coronavirus (COVID-19)" (9 May 2020) <https://www.gov.uk/government/speeches/transport-secretarys-statement-on-coronavirus-covid-19-9-may-2020>.

¹¹ DfT, *Decarbonising Transport: Setting the Challenge* (March 2020), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/878642/decarbonising-transport-setting-the-challenge.pdf.

2.23 When we published the Consultation Paper in October 2019, we may have underestimated the extent of public concern about personal safety when ride-sharing. That concern is now much greater as a health concern, as people struggle to socially distance in confined spaces. This applies to drivers and transport staff also.¹² There are many issues about how to safeguard people in shared automated vehicles which the industry has yet to overcome.

Freight resilience

2.24 Another lesson from the current emergency is how dependent society is on freight delivery. There has been renewed interest in ensuring resilient delivery systems, which are less dependent on human drivers.¹³ Automating freight delivery may be seen as a greater priority than before.

2.25 Our terms of reference asked us to focus on passenger transport. Therefore, key proposals in Consultation Paper 2 only applied to operators who carried passengers or who carried a mix of passengers and freight. They did not apply to freight-only services. We acknowledged that freight vehicles may face similar challenges and welcomed observations on how far our provisional proposals might be relevant to freight. We are grateful for all the observations we received on what is likely to become a more pressing issue.

KEY THEMES

2.26 Consultees provided detailed and thoughtful responses to each of the chapters and provided us with approximately 1,300 pages to analyse. It is difficult to convey the breadth of opinion. However, some key themes emerged.

A national HARPS operator licensing scheme

2.27 In the Consultation Paper we provisionally proposed a single national system of licensing for HARPS. This would avoid the current arbitrary distinctions between taxis, private hire and public service vehicles (based on the number of passengers carried or fare structures). We said that these divisions were already blurring and may break down altogether in the face of the new business models introduced by automation.

2.28 A single licensing scheme would also address the fragmented nature of taxi and private hire licensing authorities. In April 2019 there were 338 separate licensing authorities in Great Britain. Some were very small (with populations of less than 75,000) and lacked

¹² We note the shocking and tragic loss of life among taxi, private hire and bus drivers. A study by the Office for National Statistics published on 11 May 2020 analysed death rates in the working age population (20 to 64). It found that men working as taxi drivers and chauffeurs suffered 36.4 deaths per 100,000, while men working as bus and coach drivers suffered 26.4 deaths per 100,000. This compares to a death rate of 9.9 in the working age male population as a whole. Office for National Statistics, *Coronavirus (COVID-19) related deaths by occupation, England and Wales*, <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/causesofdeath/bulletins/coronaviruscovid19relateddeathsbyoccupationenglandandwales/deathsregistereduptoandincluding20april2020#to>.

¹³ See for example, World Economic Forum, *How COVID-19 could open the door for driverless deliveries* (7 April 2020) <https://www.weforum.org/agenda/2020/04/how-covid-19-could-open-the-door-for-driverless-deliveries/>.

resources to deal with the new demands of automated driving. This fragmentation also causes problems when vehicles cross borders.

- 2.29 As we discuss in Chapter 3, most consultees favoured a new system of operator licensing at a national level. Of the 82 people who engaged with this question, 73 agreed and only four answered no.
- 2.30 We are encouraged by the support for a new system of HARPS operator licensing. In our next consultation, we intend to put the main proposals in Consultation Paper 1 and 2 together. Consultation Paper 3 will outline a full safety framework, to regulate both the ADS itself (through the ADSE) and the operation of services (through the HARPS operator).

Local powers to manage HARPS

- 2.31 The main concern about a national scheme was whether it would give local authorities the tools they need to manage the introduction of HARPS in their areas. For example, Transport for London acknowledged that some national safety standards are desirable, but said local authorities should have powers to make regulations in response to local issues. In a detailed response, the Urban Transport Group argued that local authorities have, and ought to have, considerable local discretion to ensure that taxi-like services “are relevant to local circumstances (that vary widely from busy urban centres to deep rural environments) and in line with local democratic mandates”.
- 2.32 In the light of the responses we received, we will explore ways to provide greater local involvement within and alongside the national scheme. In particular, we will look at how to set quotas for the phased introduction of HARPS; the role of local enforcement; and co-operative schemes, whereby local authorities providing facilities for HARPS may require HARPS to fulfil their conditions.

Flexible regulation that encourages innovation

- 2.33 In Consultation Question 13, we tentatively proposed that legislation should set out broad duties for HARPS operators, with powers to issue statutory guidance to supplement these obligations. We thought that it was important that the regulatory regime was flexible, so that it could learn from experience and encourage best practice.
- 2.34 Most responses agreed with our approach. Of the 69 respondents who answered this question, 60 agreed and only two answered no. Consultees highlighted that flexibility and adaptability were key, especially in the early stages of HARPS deployment.
- 2.35 In Chapter 4 we looked in depth at the legislation on public service vehicles, and proposed a similar structure. Most consultees agreed, for example, that operators should be of good repute and professionally competent. There was also a consensus that HARPS operators should be under a duty to maintain vehicles; insure vehicles; supervise vehicles; and report collisions and other incidents.

The importance of accessibility

- 2.36 In Chapter 6, we considered how accessibility could be embedded in the regulatory framework for HARPS. There was considerable engagement with this chapter, with many practical suggestions for ways to maximise the accessibility of HARPS. There was strong support for “co-design” (where older and disabled people work with

designers, operators and regulators to ensure vehicles and services are accessible from the outset) and for a “whole journey” approach.

- 2.37 Consultees supported two key provisional proposals. The first would extend section 29 of the Equality Act 2010 to HARPS operators. In other words, HARPS operators would be covered by the duty on service providers not to discriminate and to make reasonable adjustments for people with disabilities. The second proposal would develop national minimum accessibility standards for both vehicle design and the whole user experience relating to HARPS.

Regulatory tools to prevent empty cruising

- 2.38 Initially, HARPS are likely to operate in defined areas and in limited numbers. However, once the technological challenges have been met, the deployment of automated vehicle technology may be rapid. One concern was that large numbers of new vehicles could add to congestion and pollution. Where the cost of driving is less than the cost of parking, HARPS vehicles may be encouraged to “cruise empty” whilst waiting for their next fare.
- 2.39 In Chapter 7, we discussed regulatory tools to manage the use of HARPS on UK roads. We examined traffic regulation orders (TROs); kerbside and roadside pricing; and whether there should be powers to cap the number of HARPS in a given area.
- 2.40 Many consultees were concerned about congestion and empty cruising. Transport for West Midlands, for example, saw empty cruising as a central concern and advocated for “adequate consideration of the risks that empty running may have on congestion and parking”. Furthermore, many consultees wished to see more streamlined procedures for creating digital TROs that automated vehicles could access and comply with. In addition, strong arguments were made in favour of more sophisticated road pricing schemes. Consultees highlighted that new technology (coupled with the data generated by HARPS) would allow for road pricing based on miles travelled, with different mileage rates based on place and time of day.
- 2.41 However, consultees pointed out that the move towards automation is part of a wider revolution in road transport, brought about by the need to combat climate change, improve air quality and tackle congestion. Issues about TROs, parking charges and road pricing are not specific to HARPS. Many consultees opposed treating HARPS differently from other traffic and thought that any changes should apply more widely. These issues may be more appropriately dealt with by DfT than as part of this review.
- 2.42 The majority of consultees agreed with a phased approach to HARPS introduction, with limits on the number of vehicles a given HARPS operator can deploy in a given area for an initial period. We intend to look further at how this would work, and how it can reflect local needs.
- 2.43 However, longer-term control of numbers provoked mixed responses. Consultees were split as to whether the market can be relied upon to prevent oversupply of HARPS, and what conditions are required for effective competition.

Integrating HARPS with mass transit

- 2.44 Chapter 8 considered how to integrate HARPS with mass transit. When we asked when HARPS should be covered by bus regulation, this drew a mixed response, with no clear consensus.
- 2.45 We then considered a possible statutory partnership scheme, by which traffic authorities providing facilities for HARPS could impose requirements on them (such as participation in joint ticketing). Most consultees supported this, particularly if it allowed consumers to plan, book and pay for journeys on a single digital platform. We intend to consider it further in our next consultation.

ACCESS TO DATA

- 2.46 In Consultation Paper 2 we did not directly discuss issues related to access to data and data privacy. However, many respondents saw issues around data as central to HARPS deployment.
- 2.47 In Chapter 6, we asked a narrow question relating to data: whether operators of HARPS should have data reporting requirements regarding usage by older and disabled persons. In response, many consultees expressed concerns about data more generally. Similar concerns also arose in the context of other questions. Consultees highlighted how HARPS would have the potential to generate large quantities of data which could be used to improve HARPS services, traffic management and accessibility. For this reason, some thought that HARPS operators should be under a legal duty to share some types of data about their services. At the same time many consultees highlighted the potential data protection issues HARPS presented.

The usefulness of data

- 2.48 Many respondents discussed the value of collecting data. Anxiety UK highlighted the value in collecting data regarding disabled users, advocating a detailed breakdown by disability, “e.g. panic disorder, claustrophobia, generalised anxiety disorder (GAD) etc”.
- 2.49 IAM RoadSmart also saw HARPS data as useful for developing better transport for older and disabled people:

Data should be easy to provide in these new systems so once again we would expect it to be shared to allow development of ever safer and smoother access arrangements for older or disabled users.

- 2.50 Some believed dissemination of data from HARPS would improve safety. Humanising Autonomy said:

We believe that cross-industry data sharing will be vital to helping avoid mistakes, increasing safety, and there is a high chance that the data would include edge cases that others are trying to solve or gather more data on.

- 2.51 Others thought that data from HARPS could be used to improve the transport system as a whole:

They should represent one component of a wider transport network and... relevant data about that service should be contributed as part of joint marketing, ticketing and information platforms. [Reed Mobility]

More broadly, occupancy data (regardless of passenger type) for HARPS would be helpful to understand whether vehicles are being well utilised. [Urban Transport Group]

An obligation to share

- 2.52 Some consultees thought it would be in the public interest to require HARPS operators to share certain data. For example, George Economides (Oxfordshire County Council) suggested that a “data exchange responsibility for the public good is needed.”

- 2.53 Similarly, the Chartered Institution of Highway and Transportation felt that data sharing should be among the requirements of running a HARPS operation:

We need to ensure that the proper legal framework is available to promote and require the sharing of critical data between highways authorities, transport operators, vehicle providers and users to provide the best experience to all users of the network.

- 2.54 The Senators of the College of Justice (Scottish Court of Session judges) made a similar comment:

It is particularly important to report and record untoward events to contribute to improving the safe deployment of automated vehicles. The duty to report and record should also be wide enough to provide perspective and the duty should therefore include such data as distance travelled without incident.

Data protection law

- 2.55 Many consultees who could see the benefits of data sharing also noted the need to comply with data protection laws. Consultees highlighted the many pieces of regulation that could apply to HARPS. These included: the General Data Protection Regulation (GDPR), the Data Protection Act 2018, the Privacy and Electronic Communications (EC Directive) Regulations 2003¹⁴ and Network and Information Systems Regulations 2018 (NIS).¹⁵

- 2.56 Consultees explained that our proposed duties for HARPS operators would also raise data protection issues. For example, the Crown Prosecution Service highlighted how data protection issues might complicate HARPS operators’ duties to safeguard passengers:

The only way we can envisage HARPS operators being able to fulfil this duty is by installing CCTV in every vehicle. This would give rise to questions over the proportionality of such a measure. If audio recordings were also to be introduced then

¹⁴ SI 2003 No 2426.

¹⁵ SI 2018 No 506.

this would create further difficulties as to how to balance passengers'/users' privacy rights and the data protection implications that would follow.

- 2.57 DAC Beachcroft LLP said that the NIS regime may oblige HARPS operators to take appropriate measures to ensure security of data and information systems. Operators might also have to “notify national regulators of security incidents within 72 hours, and HARPS could be fined up to £17m in the most serious cases”.¹⁶
- 2.58 Overall, access to data was seen as critical to making the regulatory system work. We intend to include a specific chapter on data issues in our next Consultation Paper, to be published later this year.

¹⁶ DAC Beachcroft LLP noted that the DfT might be the competent authority for HARPS for the purposes of the NIS. They thought there would need to be a range of sector specific technical guidance for HARPS operators.

Chapter 3: Operator Licensing – a national system

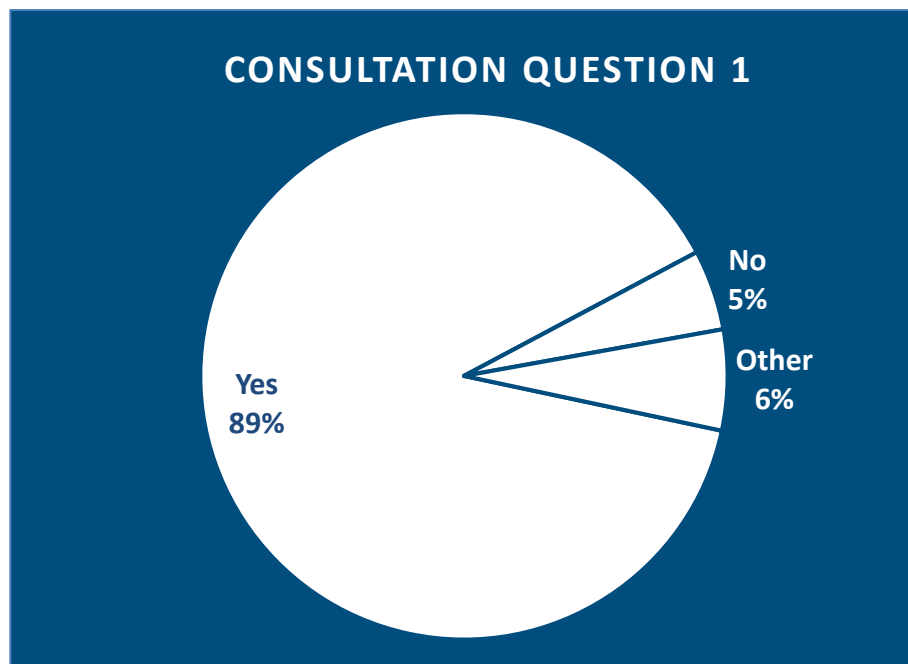
OVERVIEW

- 3.1 In Chapter 3 of the Consultation Paper we considered the licensing system for those who operate Highly Automated Road Passenger Services (HARPS). We coined the term HARPS to encapsulate a new form of service, which uses highly automated vehicles to supply road journeys to passengers without a human driver or user-in-charge.
- 3.2 The safe operation of HARPS is our priority. To ensure this, the law will need to identify the person or organisation responsible for updating, insuring and maintaining the vehicles and guarding against cyber-attacks. Furthermore, we need to ensure that HARPS are supervised so that vehicles do not stop inappropriately and impede traffic. We therefore proposed a new system to license those who operate HARPS.
- 3.3 HARPS operator licensing does not attempt to address the safety of the automated driving system (ADS) itself. Our proposals for HARPS operators would sit alongside a general safety assurance system for every ADS. We outlined how this safety assurance system might work in Consultation Paper 1. In particular, we proposed that each ADS would be put forward for approval by an “Automated Driving System Entity” or ADSE, who would vouch for the system’s safety. We see the ADSE as continuing to bear responsibility for the safety of the system design.
- 3.4 Under our proposals, the safety assurance system and HARPS operator licensing would operate alongside each other. The first regulates the design of the system; the second regulates how the vehicle is used in practice. In some cases, the ADSE and HARPS operator may be the same person, but we are not assuming that this is the case.
- 3.5 Traditionally, road passenger services have been divided into taxis, private hire vehicles (PHVs), public service vehicles (PSVs) and rental services, with separate regulatory systems applying to each. At one stage, these separate services corresponded to clearly recognised market divisions: people understood the difference between a taxi, minicab, bus, coach or hire car. But these divisions are already blurred and may disappear altogether in an automated world. There were other problems in applying these systems to HARPS. Taxi and PHV licensing are highly localised: many licensing authorities are small and lack the resources to deal with the new regulatory demands of HARPS. Furthermore, taxi regulation relies on licensing vehicles and drivers (rather than operators) so cannot be applied in the absence of a driver.
- 3.6 Rather than attempt to shoehorn HARPS into this existing structure, we provisionally proposed a new form of HARPS operator licensing, organised at national level. We asked consultees if they agreed.
- 3.7 There was considerable support for a new, single national system of operator licensing: 89% of consultees agreed. The main arguments in favour were safety; avoiding unnecessary burdens on operators; and avoiding regulatory shopping.

- 3.8 On the other hand, several consultees expressed concerns about devolution. They noted that elements of the proposed regulatory system for HARPS would fall within the competencies of the devolved legislatures. They would therefore need to respect the devolution settlement.
- 3.9 Many consultees highlighted the need for local involvement: more autonomy would allow local authorities to respond to local demand and meet local transport objectives. It was suggested that even if licences were issued by a national authority, licensing conditions should be set by local authorities.
- 3.10 We also provisionally proposed that there should be a national scheme of basic safety standards for operating a HARPS. The vast majority (95%) of consultees agreed. Consultees thought that national standards would provide a consistent level of safety across the UK and ensure a “level playing field” for developers. Some consultees also highlighted that it might be useful to align with any relevant international standards.

A SINGLE NATIONAL SCHEME

Q1: Do you agree that Highly Automated Road Passenger Services (HARPS) should be subject to a single system of operator licensing?



- 3.11 There is considerable support for this proposal. Of the 82 people who engaged with this question, 73 (89%) said “yes”. Only four said “no” and five said “other”.

Arguments in favour of a national system

Consistent safety standards

- 3.12 Many of those arguing in favour of a national system stressed the need for consistent safety standards throughout the UK. For example, the Suzy Lamplugh Trust said that licensing “should be consistent across the country to ensure passenger safety is

ensured to the highest standard for all passengers”. The Equality and Human Rights Commission (EHRC) echoed this sentiment:

spontaneous travel is fundamental to the right to disabled people in realising their right to independent living, as guaranteed by Article 19 of the UN Convention on the Rights of Persons with Disabilities... uniform licence conditions at a national level would ensure that passengers of these vehicles know what to expect wherever they travel.

- 3.13 Similarly, Aviva said that passengers “should expect the same degree of safety wherever they use HARPS and not be separated by an arbitrary division”. The International Underwriting Association of London explained:

In the context of highly automated vehicles, maintaining cybersecurity and ensuring that safety critical updates are carried out is of the utmost importance and, therefore, identifying the individual or organisation responsible for this maintenance is key to the safe operation.

- 3.14 Intel Corporation (and Mobileye, an Intel Corporation company) highlighted the importance of technical expertise and consistent oversight to ensure HARPS are safe:

the operator licensing system for HARPS will also certainly include a technical assessment. Forcing local authorities to carry out such tasks would create a disproportionate burden. It is also not certain that the required technical assessment could be carried out everywhere in a uniform manner with the proper expertise required. A single national system of operator licensing would ensure a level playing field nationally. It would also ensure that the body in charge of supervising HARPS has the expertise and knowledge needed to carry out its tasks.

Avoiding unnecessary burdens for operators

- 3.15 Many respondents highlighted the cost of dealing with the many different local licensing regimes. As XPI Simulation Ltd put it, localised licensing would act as a barrier to all entrants, and unnecessarily increase the cost of deploying HARPS.

- 3.16 The Society of Motor Manufacturers and Traders (SMMT) said that a national system would reduce these barriers:

A harmonised process and system at the national level that is applied in uniformity across the country enables operators to focus on the safety of their operations instead of expending much time and effort complying with multiple, and likely incoherent, licensing requirements at the local level.

- 3.17 Autonomous Intelligent Driving GmbH (AID) also noted that national licensing could help ensure operators are trained in a uniform way and to a single high standard.

Avoiding the problems of cross-border working

- 3.18 A national licensing system would also remove the current problems of cross-border working. IAM RoadSmart explained:

A national system would avoid any issues around “border migration” with organisations seeking registration in one council area in order to then trade in others.

3.19 The Bar Council highlighted problems with the existing system of localised PHV licensing. As we explained in the Consultation Paper, the rules on cross-border working differ between taxis and private hire but can cause problems for each.¹⁷

Concerns about a national licensing system

Devolution in Scotland and Wales

3.20 The main concern about a national licencing system was that it must respect the devolution settlement. Although the current system of public service vehicle operator licensing is reserved to the Westminster Parliament, taxi and private hire licensing is devolved in both Scotland and Wales. There was a fear that a single national system would encroach on this division. As the Faculty of Advocates put it:

Given the tightly drawn definition of the transport reservations under Section E1 of Schedule 5 to the Scotland Act 1998, elements of any regulatory system are likely to fall within the competence of the Scottish Government.

3.21 Transform Scotland and the Scottish Association for Public Transport said that there should be separate systems for England, Scotland and Wales. The EHRC commented that the “three nations of Great Britain may wish to create their own national regulators”. However:

any regulators across the three nations must, at a minimum, be required to work together to produce common minimum standards, given issues around cross-border movement of vehicles, for example.

3.22 Maple Consulting Ltd added that in the case of Wales “there will also be a requirement for guidance and licensing in the Welsh language”.

Northern Ireland

3.23 Some respondents raised the unique position of Northern Ireland, where HARPS may operate across the border with the Republic of Ireland. As the Faculty of Advocates explained:

Unless a UK HARPS regime is sufficiently harmonised with that in the Republic of Ireland, there may well be complications with any service crossing the land border between the UK and the Republic of Ireland. However, HARPS services in Northern Ireland will not be able to cross (by land) into Great Britain. This suggests that a different approach may require to be taken in Northern Ireland than in the rest of the UK.

3.24 We agree that Northern Ireland raises particular issues. Our proposals are intended to apply only to England, Scotland and Wales.

¹⁷ CP2, paras 3.28 to 3.32.

International alignment

3.25 In the Consultation Paper we noted that taxi and private hire licensing was administered by individual states. By contrast, PSVs have been regulated at EU level. It is currently possible to obtain a PSV licence for both national and international operations (as where a UK tour operator provides coach travel to the Alps). Eventually HARPS may provide international travel of this sort, but we thought that this was some time away. Given the added complexity of regulating cross-border travel, we explained that at this stage we were looking to license services operating only within Great Britain.

3.26 Some respondents thought that this approach was insufficiently ambitious. As Gemserv put it:

Consideration should be given that HARPS could be a global service provision across national jurisdiction and as such international standards would be desirable with regards to the automated digital processes to deliver HARPS beyond national borders.

3.27 Other respondents argued that even if services (at least initially) operated only within the UK mainland, UK operator licensing should align with international standards (particularly on issues such as maintenance, cyber-security and software updates). Richard Sarginson, for example, expressed concern that:

our system may diverge from that developed and used in Europe. It is possible to see that, if we are not aligned with EU regulations, difficulties may arise in the long term.

3.28 Oxbotica, Maple Consulting Ltd and HORIBA MIRA all made the point that standards should be consistent with those in other EU countries.

3.29 We agree. We think that the detail of the standards to be applied should be flexible and should follow best international practice.

The need for local control over congestion issues

3.30 Several local authority organisations expressed concern that national licensing would remove their ability to control congestion. In a detailed response, the Urban Transport Group put this point forcefully:

Given the rapid growth in private hire numbers in recent years, and the challenges this has generated – particularly around congestion – local transport authorities and Transport for London need the power to limit the number of licences granted to passenger service vehicles capable of carrying up to eight people. These decisions are best made locally in the context of the particular transport mix and priorities of the area.

3.31 Urban Transport Group argued that local decision-making would ensure that the service responds to local circumstances (that vary widely from busy urban centres to deep rural environments). It would also align with local democratic mandates.

3.32 The Scottish Trades Union Congress also expressed their concern that a national operator licensing system would be less democratically accountable than if licenses were issued by local authorities.

- 3.33 Transport for London (TfL) acknowledged that some national standards were desirable. However, they also thought that local authorities should have powers to make regulations in response to local issues:

National minimum standards should be set across all areas and for safety standards these should set to a high level but there should also be the option for the rules and requirements to be further strengthened based on city needs as defined by local authorities/regulators. It is also important that local authorities maintain the ability to issue short term licences (to experience the service in operation), set specific conditions to the licence and take immediate action (suspend/revoke) if an issue that contravenes licence conditions is identified.

The relationship between the regulatory structure for HARPS and human-driven services

- 3.34 Uber said that “for the foreseeable future, AVs -- whether deployed through HARPs or otherwise -- will account for only a portion (and a relatively small portion, to begin with) of passenger rides throughout the UK.” Uber went on to describe its approach to deploying automated vehicles relying on a mix of conventionally-driven vehicles alongside AVs:

The interlinked nature of these service offerings favors a very deliberate approach to the formulation of a nationwide regulatory approach to HARPS. Although likely a positive development standing alone, this type of approach could (counterintuitively) lead to additional redundancy or complexity if two types of analogous offerings on a single platform -- human-driven rides and AVs -- where subject to totally different regulatory entities, even though the actual services are seamlessly connected (both from a passenger and technological perspective).

Local administration

- 3.35 Many stakeholders suggested that while licenses should be issued by a national authority, the licensing conditions should be enforced and administered by local authorities. For example, Aviva said:

We believe riders should expect the same degree of safety where ever they use HARPS and not be separated by an arbitrary division. However, administration could be managed locally as per existing PHV, but a National Standard would provide greater consistency.

- 3.36 Transport for West Midlands (TfWM) made a similar point:

Whilst national minimum standards are important, in order to fulfil the Department for Transport’s Future of Mobility objectives, Transport for West Midlands believes that operator licensing should be administered and determined locally/regionally. It is imperative that any national standards do not compromise innovation potential and that local regions are able to ultimately have autonomy over licensing standards to respond to local demand and meet local objectives.

3.37 Similarly, Urban Transport Group thought that:

local authority licensing officers should be given powers to undertake enforcement action against any taxi or PHV operating within their authority area, no matter where it is licensed.

3.38 Transport for Greater Manchester thought licensing of HARPS should be devolved to combined authorities:

As we do not yet know exactly how HARPS will be deployed, setting the licensing (and conditions of licensing) at the city-region level would allow us to be more dynamic in our regulation of HARPS and ensure that they represent genuine social value for our residents.

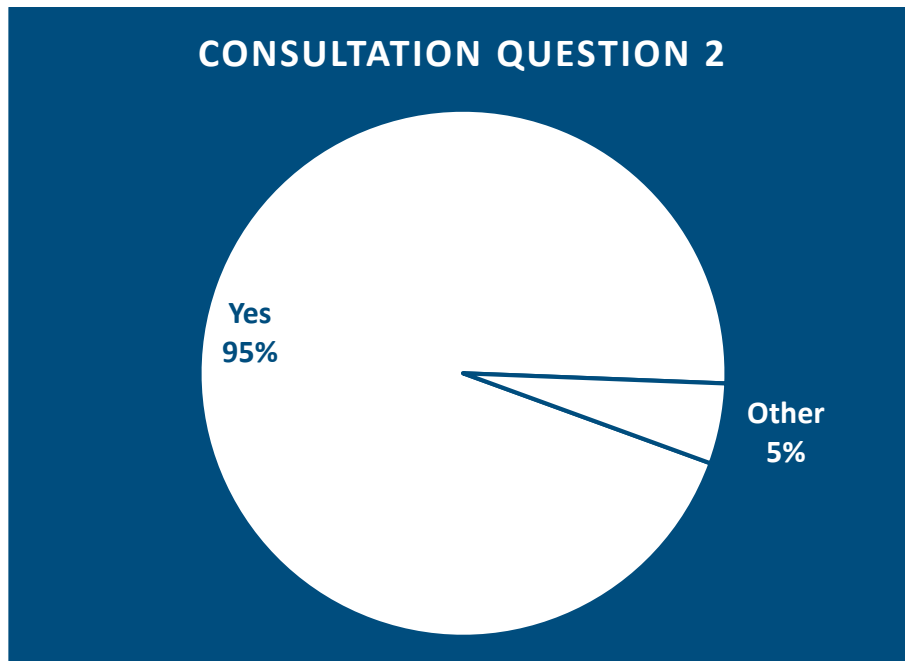
3.39 Some stakeholders suggested that even within a national system, local authorities should have exceptional powers to add conditions to HARPS operator licenses. Reed Mobility said this would be “prudent” to suit the particular interests and requirements of local authorities.

3.40 Oxbotica also suggest that “provisions should be also made for exceptions and progression, at least in the initial phase of deployment of HARPS”.

3.41 Similarly, another automated vehicle developer, Five, said that while “a single national system of operator licensing has the potential to develop and deliver a licensing framework that best meets the needs of the market”, provision should nevertheless be made for “more local scale experimentation or variation where there is a good basis for doing so, e.g. to pilot potential changes with a view to later rolling them out nationally”.

NATIONAL SAFETY STANDARDS

Q2: Do you agree that there should be a national scheme of basic safety standards for operating a HARPS?



3.42 There was even wider support for the idea that there must be a national scheme of basic safety standards for operating a HARPS. Out of 81 people who engaged with this question, 77 (95%) said “yes”, only four said “other” and no respondent said “no”.

Arguments for national safety standards

3.43 Many respondents agreed outright with the proposal. As Goggo Network explained:

It would be unproductively inefficient for each city, locality, and/or council to establish its own safety standards; conversely, it would be unnecessarily burdensome for HARPS operators to have to reckon with a patchwork quilt of differing standards. Safety is an obvious area for a national-level – and rigorous – scheme of standards.

3.44 In a similar vein, said Autonomous Intelligent Driving GmbH said:

The HARPS technology bears the potential to increase road traffic safety and regulating the operation via a national scheme would maintain a high level of safety. This ultimately generates trust with the consumer and society. The basic safety scheme would require a universal set of requirements leading ultimately to a fair competition among the service providers.

3.45 The Community Transport Association were of a similar view:

To ensure consistency of safety standards across all authorities, we agree there should be a national scheme of basic safety standards for operating a HARPS.

3.46 Oxbotica highlighted that safety standards should facilitate innovation:

Safety is the most important aspect of HARPS and the main enabler for its implementation. A national scheme should set the minimum national standards for safety and quality of the services but it should also stimulate innovation.

3.47 Intel Corporation (and Mobileye, an Intel Corporation company) said that a national safety scheme is the ideal way to ensure that all actors offering HARPS are subject to the same rules and conditions.

This is needed in order to guarantee a fair competition as well as a way for the public to commonly assess the performance of HARPS vehicles. This national scheme of basic safety standards should, among other things, ensure that HARPS operators have a valid safety process in place. In order to do this, HARPS operators should demonstrate if and how they have put such a process in place and how they comply with the national scheme for operation safety.

3.48 SMMT made a similar point:

Basic safety standards prevent the operation of unsafe HARPS by ensuring a minimum acceptable level of safety is always upheld uniformly across the entire country and in accordance with existing and future international standards. This is crucial for providing confidence to passengers that their safety is not subject to postcode lottery. Furthermore, basic standards support the acceptance of new technologies by defining official requirements instead of possibly divergent capabilities of different service providers. A “level-playing-field” of basic safety requirements is a good basis for fair competition.

3.49 Thatcham and the ABI said in a joint response that the safety scheme “should build on type approval requirements which we expect to include cybersecurity standards” adding that “for the latter, minimum standards for remote supervision, supervisor training, vehicle maintenance and passenger information should be set”. The Met Office thought that the safety scheme should also consider weather and environmental conditions.

Local concerns

3.50 Local authorities accepted the need for national safety standards but considered that these should not preclude local decisions. As TfL put it:

Setting minimum safety standards for operating HARPS will be fundamental in the world of AVs. Otherwise, operators would have to negotiate many different regulatory standards (which means increased costs) and lack of consistency. However, it is essential that local authorities and transport authorities maintain the power to strengthen these standards with additional service standards specified at local level, including for example air quality standards, parking restrictions etc.

3.51 TfL also suggested that the national safety scheme should be built upon the work currently being carried out for the purposes of developing safety guidelines for control systems (BSI PAS 1880) as well as trials and testing (BSI PAS 1881).

THE WAY FORWARD

- 3.52 We are encouraged by the widespread support for a new national system of HARPS operator licensing to cover all passenger services, irrespective of the size of the vehicle or fare structure. In our next consultation, we intend to put the main proposals in Consultation Paper 1 and 2 together. Consultation Paper 3 will outline a full safety framework, to regulate both the ADS itself (through the ADSE) and the operation of services (through the HARPS operator).
- 3.53 There is a clear consensus that the standards required to ensure safety should be set nationally. However, we acknowledge that any legislation must be consistent with the devolution settlement. To the extent that elements are not reserved to the UK Parliament it may be that England, Wales and Scotland decide to establish separate schemes. If so, we hope that the three Parliaments and their respective Governments would work together to consider how far they can take a common approach. Similarly, we would hope that the three schemes would co-operate to agree harmonised standards and to allow vehicles to cross borders.
- 3.54 We also acknowledge the need for HARPS services to respond to local circumstances, in accordance with local democratic mandates. In Chapters 7 and 8 we discuss how to improve the range of tools by which transport authorities can meet the challenges of their areas and how these might apply specifically to HARPS. For example, in Chapter 7 we consider traffic regulation orders, kerbside pricing and road pricing. In Chapter 8 we provisionally proposed a new form of statutory collaboration, by which authorities providing facilities for HARPS could impose requirements on operators, including participation in joint ticketing.
- 3.55 In the light of the responses we received, we will also explore other ways to provide greater local involvement, including local enforcement. Furthermore, as discussed in Chapter 7, most consultees supported a phased approach to HARPS introduction, with an initial limit on the number of vehicles a given operator can use within a given area. We will need to consider whether there should be a formal role for transport authorities in setting such limits.

Chapter 4: Operator licensing - scope and content

OVERVIEW

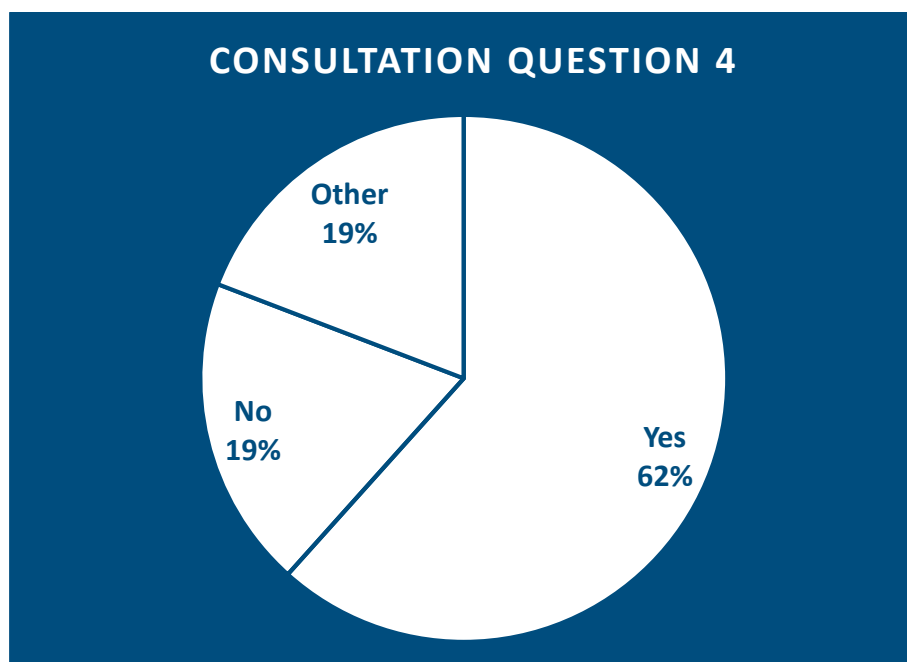
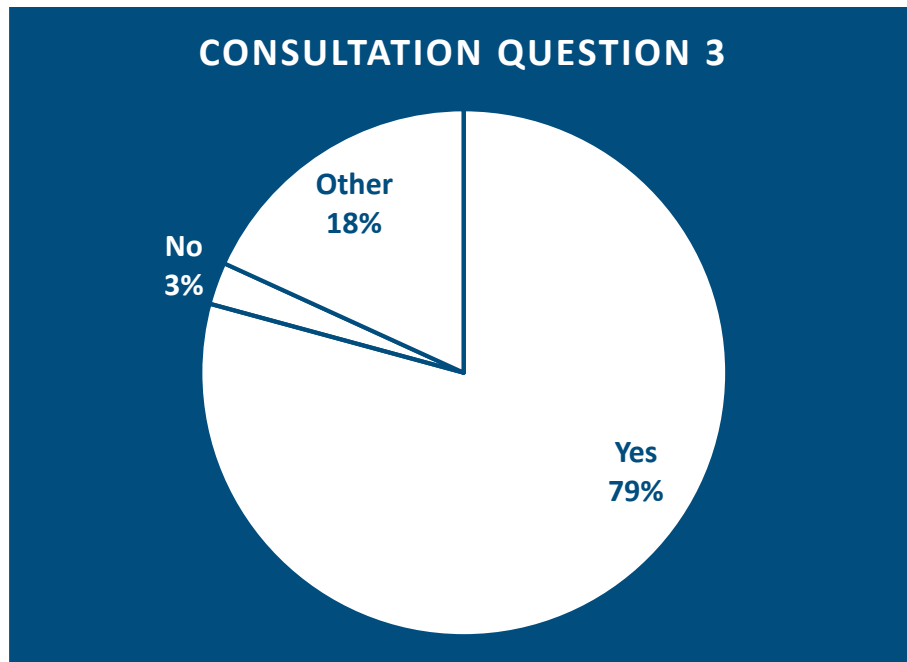
- 4.1 In Chapter 4 we explored how a new licensing scheme for Highly Automated Road Passenger Services (HARPS) might work. We used the Public Service Vehicle (PSV) operating licensing system as a starting point. PSV legislation is often phrased in terms of broad principles and supplemented by guidance which provides more detail for operators. We set out how we believed that any legislation for HARPS operators will need to combine outcome-based principles with flexible guidance about how those outcomes are met.
- 4.2 We provisionally proposed to define a HARPS operator as any business which carries passengers for hire or reward using highly automated vehicles on a road without a human driver or a user-in-charge. We asked consultees if they agreed. Generally speaking, respondents supported the proposal. However there were reservations about some phrases, including “on a road” and “hire or reward”.
- 4.3 Both PSV and private hire legislation contain many exemptions, particularly for community groups and community bus services. The majority of respondents thought that safety was paramount: therefore, at least initially, the existing exemptions should not apply. However, many consultees wished to encourage innovation. Most thought that Ministers should have power to exempt specified trials from at least some aspects of the scheme, provided that the operator made a stringent safety case.
- 4.4 Under current legislation, those applying for standard operator licences must demonstrate that they are, for example, of good repute and professionally competent. Most respondents (77%) agreed that these (or similar) criteria should be included within the HARPS scheme. Many respondents agreed that a transport manager was necessary but shared our concern that professional competence would be difficult to ascertain in the early stages of HARPS.
- 4.5 There was also agreement that HARPS operators should be obliged to maintain vehicles; insure vehicles; supervise vehicles and report collisions and other incidents. However, there were mixed views on how far operators should be obliged to safeguard passengers from assault or abuse by other passengers. Managing shared transport in the absence of a driver remains a difficult issue.
- 4.6 In response to our question on price information, consultees agreed that HARPS passengers need access to transparent price information before booking. There were mixed views, however, on whether the HARPS operator licensing agency should have power to withdraw the licence from an operator who failed to give this information.
- 4.7 Finally, we did not express a view on which agency should administer HARPS operator licensing, seeing this as a decision for Government rather than the Law Commissions. However, we welcomed observations to pass on to the Department for Transport (DfT). This elicited views in favour of a range of organisations, including the Traffic

Commissioners, the Driver and Vehicle Standards Agency and the safety assurance agency responsible for automated driving systems.

DEFINING A HARPS OPERATOR

Q3: Do you agree that a HARPS operator licence should be required by any business which: (1) carries passengers for hire or reward; (2) using highly automated vehicles; (3) on a road; (4) without a human driver or user-in-charge in the vehicle (or in line of sight of the vehicle)?

Q4: Is the concept of “carrying passengers for hire or reward” sufficiently clear?



4.8 Given that the issues raised greatly overlap, the discussion below includes our analysis of responses to Consultation Questions three and four.

- 4.9 There was broad support for our definition of a HARPS operator. Of the 78 respondents who engaged with this question, 62 (79%) agreed with our definition. Some supported the proposal without qualification. For example, Intel Corporation (and Mobileye, an Intel Corporation company) said:

These requirements are clear and extensive enough to cover all sorts of mobility services using highly automated vehicles. They will allow a level playing field between all actors offering new mobility services.

- 4.10 Other respondents, however, expressed concerns about some aspects of the definition. A few (14 or 18%) said “other” while two said “no”. As we discuss below, concerns were expressed over “carrying passenger for hire or reward”, “on a road” and “in line of sight of the vehicle”. In addition, in the process of defining a HARPS operator, Uber encouraged us to avoid making assumptions about particular development paths to deployment of passenger services using automated vehicles. In particular, it noted:

the potential divide between a HARPS entity, the developer of a given AV, and other service providers that may connect passengers with AVs without serving as the vehicle operator. In certain instances, the HARPS may provide passenger transportation utilising AV technology that the HARPS-entity has actually developed. But in other situations, an entity may offer transportation services utilising AV technology developed and perhaps owned, operated, and maintained by a some third-party.

- 4.11 Of the 73 respondents who engaged with Consultation Question four, 45 (62%) said “yes”. The remaining respondents were split evenly between those who responded “no” and “other”. There were 14 respondents (19%) who said “no” and a further 14 (19%) who said “other”.

“CARRYING PASSENGERS FOR HIRE AND REWARD”

- 4.12 In the Consultation Paper we explained that “hire or reward” is a broad test. Case law has defined it in terms of a business test: does the service for which payment is made go beyond the bounds of mere social kindness?¹⁸ Thus a father carrying children to school in his minibus for occasional payment was found to be operating a business.¹⁹ Nor does it matter who receives the payment. Hire or reward can include so-called courtesy coaches, which people pay for within hotel, private school or nursing home fees.²⁰
- 4.13 We asked specifically (in question 4) whether the concept “of carrying passengers for hire and reward” was sufficiently clear to be used in this context. A majority of respondents thought that the concept was sufficiently clear. Of the 72 people who engaged with this question, 44 (61%) said “yes”; 14 (19%) said other, and 14 (19%) said no.

¹⁸ *Albert v Motor Insurance Bureau* [1972] AC 301, discussed in CP2, paras 4.8 to 4.11.

¹⁹ *DPP v Sikonda* [1993] RTR 90.

²⁰ *Rout v Swallow Hotels Ltd* [1993] RTR 80.

The concept is sufficiently clear

- 4.14 Those arguing in favour²¹ of a hire or reward test described it as familiar and well-understood:

We are of the view that, broadly, the concept of carrying passengers for hire or reward is sufficiently clear and is an established concept in English and Welsh law. There have not been any significant cases in recent years, suggesting that this concept does not often cause difficulties and is unlikely to cause any difficulties in respect of HARPS operator licensing. [Crown Prosecution Service (CPS)]

This term is well known in the transport and insurance industries and would be appropriate for HARPS. [Reed Mobility]

Existing definition and case law provide a reasonable level of clarity. Amending the definition would require new case law to be built up to find legal tests that clarify grey areas that were unforeseen during drafting. [HORIBA MIRA]

Relevant case-law offers satisfactory and well-developed criteria to be applied to this emerging context. [Smart Mobility Unit, University of Hertfordshire]

- 4.15 The Society of Motor Manufacturers and Traders (SMMT) agreed with the proposal, with a small caveat that the licensing system should apply to operators who provide free services alongside paid services:

It could be made clearer that HARPS that normally carry passengers for hire or reward but may from time to time carry passengers free of charge should still be subject to operator licensing requirements. For example, some manually driven shuttle buses in Tel Aviv and Tiberias in Israel already provide free rides on Shabbat, but would normally charge a fare on other days.

The concept is insufficiently clear

- 4.16 By contrast, automated developer Oxbotica considered the test to be unhelpfully vague:

The concept.... is open for interpretation, and therefore leads to litigation. A better definition of the scope should be provided including measurable indicators or metrics to determine when the activity becomes 'systematic' or goes beyond mere 'social kindness'.

- 4.17 Another developer, Five, also criticised the test, reporting the problems it encountered when trialling automated vehicles in London:

Although the company did not accept any payment for the trials, in order to run the trials without requiring a licence, we were advised not to permit trial participants to select their journey's origin and destination (instead they were pre-programmed); and, not to offer a regular trial experience or at times of the day where it could substitute an existing mode of commuting.

²¹ Stagecoach Group plc, ABI and Thatcham (joint response), Tim Marlow Ltd, TfWM, Urban Transport Group, Police Scotland, Richard Morris (Innovate UK), CPS, Campaign for Better Transport and the Bar Council all provided similar justifications for supporting this test.

- 4.18 The International Underwriting Association of London (IUA) also asked for clarification on the border between commercial activities and “mere social kindness”:

The test for hire or reward is well established and understood. However, we think that any further clarification around ‘service for which payment is made go beyond the bounds of mere social kindness’ would be welcome.

- 4.19 The Office of the Traffic Commissioner drew our attention to the Guidance provided in the Senior Traffic Commissioner’s Statutory Document No 13. It noted, however, that further clarification would be helpful:

Changes to business models have tested the commonly held view of ‘hire or reward’ and an element of greater clarity would be welcomed for all providers of passenger services. It is especially important to provide this clarification to ensure that people continue to invest in the development of vehicles that are intended to provide niche services.

- 4.20 Barristers at Temple Garden Chambers²² criticised the case law as it applied to co-operative, non-business arrangements:

As one textbook points out, it is difficult to view DPP v Sikondar as a “reward” case given the parent probably made losses on the transaction. We would add that while businesses of course can make losses, the parent probably also expected to make a loss, which differentiates the arrangement from commercial ones.

- 4.21 Transport for London (TfL) thought that even informal arrangements should be covered:

We consider that the business test in Albert v Motor Insurers’ Bureau [1971] 3 WLR 291 should be extended to encompass all scenarios in which the carriage of passengers goes beyond an informal arrangement that has its basis in social or familial kindness. Any new test should also make clear that consideration need not be in the form of a direct or indirect payment in order to constitute a reward.

HARPS operator licensing should apply to all services, irrespective of payment

- 4.22 A more radical view was that HARPS operator licensing should apply to all highly automated road passenger services without a user-in-charge, irrespective of whether payment was made. We explore this issue further in Chapter 5, when we consider how to regulate the operation of privately-owned “passenger-only” vehicles.

Freight

- 4.23 Some respondents suggested that freight vehicles should be covered by the same scheme, especially as many operators would cover both. As WMG, University of Warwick said:

HARPS may be carrying passengers during the day and freight during the night. Therefore, we would recommend that the distinction between passengers and freight

²² The response was provided by Alex Glassbrook, Emma Northey, Scarlett Milligan, Paul Erdunast, and Harry Peto. It represents the views of the individual barristers and does not represent the view of Temple Garden Chambers.

be removed. One of the key city HARPS applications involves logistics delivery (e.g. Amazon, UPS deliveries).

“ON A ROAD”

4.24 In the Consultation Paper we explained that some road traffic provisions (such as construction and use offences) apply to “a road”,²³ while others (such as careless driving) apply to “a road or other public place”.²⁴ We provisionally proposed to use the slightly narrower concept of “a road”. Case law has defined a road as a way or route with identifiable edges and prepared surface, which is open to members of the public to drive or walk along it. It may be on private land.

4.25 Around a dozen respondents expressed concern that confining HARPS operators to roads may be too narrow. For example, P. Whitfield Consulting Ltd commented “that operators that provide services to the public on private land may not be covered, but should be”. ITS United Kingdom (ITS UK) asked about “certain off-road business (e.g. farms, country events, private land)”. Similarly, Richard Morris (Innovate UK) said:

If there is an automated vehicle undertaking the modern equivalent of donkey rides along a beach; that is not a road, but it is a public place and the duty of care should be just the same as on a road.

4.26 SMMT said that it was not entirely clear whether “pedestrianised public areas where, in theory, HARPS could still operate at very low speeds are considered ‘roads’”.

4.27 There was even concern that if an operator licence was only needed for services on roads this might prevent vehicles from leaving the road to park, recharge or collect passengers. This was not our intention. We were not intending to imply that vehicles could only operate on roads, or that that there would be no supervision of their safety when they operated elsewhere.

“Road or other public place”?

4.28 Several respondents suggested that the legislation should cover roads and other public places. As Stewarts Law LLP said:

It must be foreseeable that HARPS will in the future sometimes operate outside of a ‘road’ We suggest the definition should be wider, and more in line with the ‘roads and public places’ ... definition.

4.29 Autonomous Intelligent Driving GmbH (AID GmbH) suggested defining “‘on a road’ more precisely, perhaps making use of wording like ‘on public roads and areas where public transportation is permitted’”.

4.30 Overall, we think that the definition of a road, as used in the Road Traffic Act 1988 is wider than many respondents thought. A farm track is a road even though it is on private land, so long as the owner allows the public to walk or drive along it (either expressly or

²³ See for example, Road Traffic Act 1988, s 41.

²⁴ Road Traffic Act 1988, s 3.

implicitly). And while car park bays have been held not to be roads, the marked access lanes around the bays are roads.

- 4.31 However, we note the respondents' concern that automated vehicles might operate only in open spaces without identifiable edges. One possible response would be to replicate those sections of the Road Traffic Act 1988 which apply to "a road or other public place".²⁵ This would be to extend the definition to include places to which the public has open physical access.

Places without public access

- 4.32 Extending HARPS to "other public places" in this way would not include services that operate entirely in closed spaces without public access. Examples are airport buses which operate airside, or the Heathrow "pods" which operate on a fenced guideway. Some respondents suggested that these services should also fall within the definition of a HARPS. For example, Richard Morris (Innovate UK) said:

Similarly, airside operations at airports are not available for access by the general public, so are not roads (according to your definition) but are a likely area for automated passenger travel and I would suggest should be included.

- 4.33 Several respondents²⁶ pointed to the Court of Justice of the European Union decision, *Vnuk*.²⁷ The Court held that all motor vehicles operating on land should be insured, even if only used on private land without public access. It was suggested that definitions within the Road Traffic Act 1988 should be expanded in the light of the decision, and that the HARPS scheme should follow this extended definition to include any vehicle used on land.
- 4.34 We would be concerned about extending the concept of a HARPS to services in closed, private spaces. Such services are not within our terms of reference. Furthermore, services which do not involve interactions with other road users appear qualitatively different from road services. Finally, other forms of regulation apply: for example, automated systems operating on closed guideways are regulated along with railways.²⁸ A strong case is needed to extend HARPS regulation beyond roads and other public places.

"WITHOUT A DRIVER OR USER-IN-CHARGE IN THE VEHICLE"

- 4.35 In the Consultation Paper we set out a clear division between automated vehicles which have a responsible person in or near the vehicle and those which do not. Vehicles with a responsible person in the driving seat would continue to be regulated as now (that is as taxis, private hire vehicles or passenger service vehicles). The HARPS concept would come into its own when vehicles travel empty or with only passengers.

²⁵ See, for example, Road Traffic Act 1988, ss 1 to 5A.

²⁶ See, for example, responses from Stewarts and BIBA.

²⁷ Case C-162/13 *Damijan Vnuk v Zavarovalnica Trigalev* [2016] RTR 10.

²⁸ See Railways and Other Guided Transport Systems (Safety) Regulations 2006 (SI 2006 No 599).

- 4.36 Generally, respondents accepted this division. However, Five pointed out that many operators would have mixed fleets. The licensing system should not prevent operators from using their vehicles flexibly:

In the event that there is to be a licensing distinction between the operation of HARPS and of other kinds of services, then it should be possible for a single entity to hold more than one type of licence, if it intends to operate a mixture of services. Ideally, such an arrangement would not impose restrictions on specific vehicles, i.e. an operator with a large (and perhaps, mixed) fleet would be able to manage the use of its vehicles dynamically and interchangeably between different types of licensed service, to reflect demand and customer profile.

“In line of sight of the vehicle”

- 4.37 Usually, in order not to be HARPS, the responsible person would need to be in the vehicle. However, we set a small exception where the responsible person is in direct line of sight, explaining that this was to cover automated parking functions.

- 4.38 Several respondents were concerned that “in line of sight of the vehicle” was too wide: if we intended it to cover only parking functions it should be explicitly limited to parking.²⁹ As the IUA said:

We think that careful consideration of the implications of this phrase are required and that its meaning should potentially be limited to scenarios where the vehicle is in the process of parking.

- 4.39 Similarly, Richard Morris (Innovate UK) commented:

I would like to tighten up the “line-of sight” issue and use the phrase “or in clear sight of the vehicle and its intended route for sufficient distance to bring the vehicle safely to rest if required”.

EXEMPTIONS

Q5: We seek views on whether there should be exemptions for community or other services which would otherwise be within the scope of HARPS operator licensing.

- 4.40 In the Consultation Paper we noted that the current system of passenger transport regulation is subject to many exceptions, including exceptions for community groups and community bus services. Our tentative view was that, at least initially, these exceptions should not apply to HARPS operator licencing.

- 4.41 Out of 72 respondents who engaged with this question, 41 (57%) opposed the idea of exemptions for community groups, saying that community groups should be required to adhere to the same safety standards as other HARPS operators.

Although exemptions would benefit community and other services, it is important to show that those operating such services abide by the highest standards of professional competence, and are able to ensure safe, well maintained services. Safety is paramount and before exemptions are considered, it must be proven that

²⁹ See also responses from HORIBA MIRA and DAC Beachcroft LLP.

these services do not raise safety concerns. [Royal Society for the Prevention of Accidents (RoSPA)]

There should be no exemptions, all operators should be licensed to ensure standards are met and maintained. However, there could be an exemption to the cost or fees associated with the licence regime for community or charity groups. [Dean Hatton, National Police Chiefs' Council]

We suggest there should be no exemptions initially until safety issues are better understood. The public needs protection whatever the status of the operator. [Transform Scotland]

- 4.42 By contrast, Reed Mobility supported exemptions for community groups as it would facilitate enhanced mobility for older and disabled people:

One of the frequently cited benefits of automated vehicles is their potential to increase social equity by serving the mobility needs of underserved communities. However, commercial pressures may lead operators to concentrate their efforts on services that generate the greatest revenues; likely to be in higher density, higher income communities. Regulatory exemptions that do not compromise the safety, security or integrity of services but that encourage the use of HARPS to support community or other services may help support more equitable transport provision.

- 4.43 Horwich Farrelly suggested that exemptions might be granted once the technology has reached a sufficiently developed stage:

At this stage, we do not believe that there should be exceptions but in the future there could be scope for vehicles such as disability support charities, church groups, retirement village transportation, or transport within the grounds of national trust properties for instance.³⁰

- 4.44 TfL accepted that exceptions were inappropriate now but thought that further research would be needed:

Ensuring safety is paramount and allowing exemptions would potentially put this at risk. As such we believe that all services, including services that are exempt from the current operator licensing regime, should fall within the scope of HARPS operator licensing. However, we would welcome further research and impact assessment to better understand how these services may be hindered by the need to apply for HARPS licence, and accept that it may be appropriate to introduce some new derogations in certain circumstances.

- 4.45 Kennedys Law LLP said that if costs are prohibitive for community groups, government grants should be provided, rather than exemptions from licensing requirements.

³⁰ Similar views were expressed by (among others) Intel Corporation (and Mobileye, an Intel Corporation company) and SAPT.

EXEMPTING TRIALS

Q6: We seek views on whether there should be statutory provisions to enable the Secretary of State to exempt specified trials from the needs for a HARPS operator licence (or to modify licence provisions for such trials).

4.46 Under the current law, advanced trials are not allowed to carry fee paying passengers. We asked if the Secretary of State should have an explicit power to allow trials with fee paying passengers. These powers would be analogous to the vehicle exceptions in section 44 of the Road Traffic Act 1988 and section 11 of the Public Passenger Vehicles Act 1981.

4.47 Out of 74 respondents who engaged with this question, only 10 opposed the idea of powers being conferred on the Secretary of State to create exceptions of this kind.

4.48 Those who supported exemptions pointed to the need to encourage innovation. For example, Intel Corporation (and Mobileye, an Intel Corporation company) said:

Trials and experimentation should indeed be subject to a more flexible regulatory framework in order to encourage innovation.

4.49 Connected Places Catapult (CPC) added:

We believe that, in the interests of encouraging innovation (which may be critical in realising the benefits of automated vehicles), the Secretary of State should be able to exempt specified trials from the need for a HARPS operator licence. However, safety should remain the primary consideration in deciding whether a testing organisation can be granted an exemption. The process and evidence required for granting an exemption should be considered carefully.

4.50 RoSPA saw advantages in explicit exemptions:

There should be an explicit exception for organisations running trials with a limited number of vehicles, or in a limited area, and which are subject to a stringent safety case, as is the case with automated vehicle trials without fee-paying passengers.

4.51 Stevenage Borough Council also favoured exemptions for trials:

This is reasonable, provided that it is proportionately used; rationales are transparent and well evidenced; and such exemptions are short term until either their withdrawal or licensing requirements are changed.

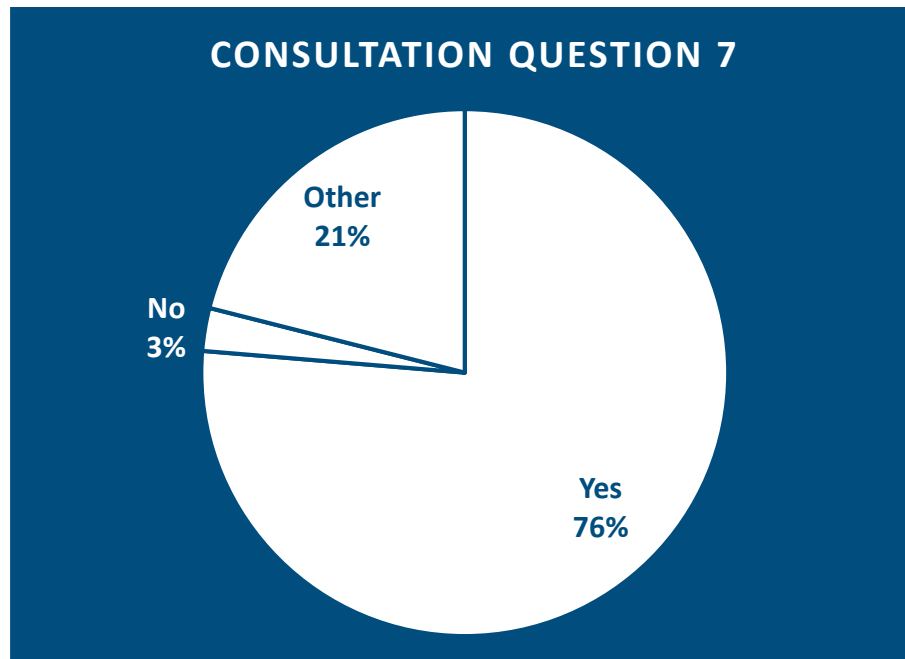
4.52 TfL highlighted that granting such exemptions could assist regulators, as it affords them greater insight into the required safety standards before HARPS are operated on public roads.

4.53 However, several respondents argued against exemptions for trials. Sustrans said that while there may be “distinct licensing arrangements in some trial circumstances”, the requirement for a license should not be waived altogether. The Suzy Lamplugh Trust was concerned that exemptions might lessen the safety standards required by operators which may put passengers at risk. Stagecoach Group plc also thought that exemptions “may place safety and quality standards at risk”.

OPERATOR REQUIREMENTS

Q7: Do you agree that applicants for a HARPS operator licence should show that they: (1) are of good repute; (2) have appropriate financial standing; (3) have suitable premises, including a stable establishment in Great Britain; and (4) have a suitable transport manager to oversee operations?

Q8: How should a transport manager demonstrate professional competence in running an automated service?



4.54 Given that questions touch upon related issues, the discussion below includes our analysis of responses to both Consultation Question seven and eight.

4.55 Of the 76 respondents who engaged with Consultation Question seven, 58 (76%) said "yes". Most agreed outright that these were sensible requirements for any business providing HARPS operations. However, 16 (21%) said "other" and two said "no".

4.56 The Bar Council thought it desirable to mirror the existing requirements:

This mirrors the Traffic Commissioners regime which in our experience has proved to be robust and effective. We see the benefits in there being a stable presence in Great Britain and records being easily accessible to the authorities. Guidance should be provided on what premises are considered suitable if HARPS and technical operating equipment are being garaged at those premises.

4.57 The Office of the Traffic Commissioner also felt that adopting the current system would be desirable:

Adopting the current licensing model would ensure that the operator's requirement to satisfy the traffic commissioner of good repute, financial standing, stable establishment and professional competence would be retained. The benefits in Great Britain's licensing system is recognised by Government and internationally, especially by those who have sought to emulate the current model.

4.58 Similarly, Burges Salmon LLP said:

Suitable requirements as to 'good repute', 'fit and proper person' and 'appropriate financial standing' are basic requirements that are common across public transport modes.... It is unlikely to be too difficult to apply similar concepts to HARPS operators and the flexibility in the concepts allows it to cover different types of HARPS operation.

4.59 By contrast, ITS UK expressed concern about simply replicating the existing licensing framework:

There is a risk here of taking the easier option of cutting, pasting and lightly amending existing regulations which originate many decades ago and reflect an operational environment very different to the one HARPS will exist in. The licencing regime for HARPS operators should be created from scratch in order to work effectively in this wholly new landscape

4.60 Kennedys Law LLP also thought it undesirable simply to replicate the current rules:

The current system which governs PSV licences is complex and has evolved in a piecemeal fashion over many years. It is likely to be difficult to establish such a system for HARPS, given the infancy of HARPS vehicles. If rigidly applied, it could be too onerous to obtain a HARPS licence. Flexibility is needed.

Good repute

4.61 In the Consultation Paper, we described this as a very general requirement, which focusses on the absence of relevant criminal convictions.

4.62 WMG, University of Warwick commented that many HARPS operators will be new companies and therefore establishing good repute might be difficult. Instead, it suggested audits of the organisational processes to provide evidence about the quality of their service.

4.63 Pinsent Masons LLP described the criterion as overly subjective, adding that organisations with poor reputations may still operate safely.

Appropriate financial standing

4.64 Under the current EU Regulation, a PSV operator must show that it has capital at its disposal of 900 euros of the first vehicle and 500 euros for each subsequent vehicle. The money may be available in a variety of ways, including credit facilities or insurance policies.³¹ We sought views on whether similar provisions should apply to HARPS, commenting that there may be a case for reducing the requirement for operators with large numbers of small vehicles.

4.65 A few respondents commented that the requirements may be unduly onerous. KPMG LLP highlighted that many operators are not currently profitable:

Ridesharing companies are currently following a different business model than traditional transportation companies and using a financial standing measure as a

³¹ For discussion of this issue, see CP2, paras 4.60 to 4.63.

prerequisite for a license could exclude them and stifle adoption of HARPS. It could be possible to require operators to show appropriate financial standing by demonstrating they have the financial ability to (a) run booked services (b) maintain vehicles (c) cover indemnities and liabilities... [and] (d) Issue refunds and/or compensation, as necessary.

4.66 Five also thought that financial standing requirements could stifle innovation:

Regulators are not likely to be in a knowledgeable position to assess whether or not a HARPS operator has sufficient funds and / or an adequate business case to ensure the long-term viability of the business, given the present uncertainties and unknowns when it comes to the expenditure necessary to operate services without human drivers. In some cases, the mere possession of a HARPS operator licence will in and of itself alter the view the market will have on the licence holding company - so the premise that the company needs to be already successful and profitable to obtain a licence provides a bias and does not level the playing field.

Suitable premises, including a stable establishment in Great Britain

4.67 At present, in order to obtain a standard licence, PSV operators must have “an effective and stable establishment in Great Britain”, in which they keep core business documents such as its accounting and personnel management documents.³² In practice, the Traffic Commissioners also require premises which are suitable for keeping and maintaining vehicles. We asked if similar requirements should apply to HARPS. The Law Society of England and Wales criticised the term “stable establishment” which “has no legal meaning”:

Stable establishment needs to have a clearer definition - the operator must hold full local legal responsibility and accountability and that should be made clear.

4.68 Richard Morris (Innovate UK) cited recharging as an illustration of the importance of suitable premises for electric vehicles:

Refueling is likely to become recharging as electrification increases. At the moment this will require guaranteed access to long overnight charging at low capacity charge points (limited by the electrical network) ... which effectively demands a depot. Higher recharging capabilities without human intervention (using ground mounted induction charging) may allow charging at short periods during the day, but we are some way from recognised and agreed standards for this, let alone wide scale roll-out. For now, I think that the PSV provisions should be used without substantive changes.

4.69 Five said that it should not be necessary for the premises to have sufficient capacity to house the entire fleet of vehicles simultaneously, because vehicles will be “in productive use”. However, “suitable premises” should have adequate provision for each of the following:

(1) *Charging infrastructure for the vehicles*

³² These include documents relating to driving time and rest and other documents needed by the competent authority to verify compliance with EU Regulations: see Public Passenger Vehicles Act 1981, s 14ZA(2)(a) applying Regulation (EC) No 1071/2009, Official Journal L 300 of 14.11.2009 p 51.

- (2) *Remote supervision infrastructure for the fleet*
- (3) *Data / networking infrastructure*
- (4) *Physical, personnel and electronic security*
- (5) *Regular cleaning facilities*
- (6) *Facilities for basic maintenance and regular vehicle checks.*

Transport manager

4.70 At present, every PSV operator must have a transport manager, who is of good repute and professionally competent. Most transport managers demonstrate professional competence by showing that they have passed a written examination.³³ We commented that HARPS would require different skills: in the early days people would still be learning as they go. We asked if HARPS operators would also need a transport manager, and if so, how they could demonstrate professional competence.

4.71 Many consultees supported the idea that a HARPS operator should employ a qualified transport manager, but acknowledged that it would be difficult to determine the required skills. As Parliamentary Advisory Counsel for Transport Safety put it:

As there will be new skills involved with development and operation of HARPS, it is difficult to currently determine the required skills and set out how a transport manager might demonstrate professional competence

However, this does not mean that prospective transport managers should not be required to demonstrate professional competence. Applicants should still need to demonstrate that they have a transport manager capable of overseeing the safe and effective operation of HARPS.

4.72 The Office of the Traffic Commissioner acknowledged that updates to the current system would be needed but noted that the system of certifying transport managers had been updated in the past:

Changing technology would mean that the transport manager Certificate of Professional Competence would need to be updated for autonomous vehicles. This qualification has already shown its ability to adapt to changing circumstances since its introduction in the 1970s.

Self-certification vs independent certification

4.73 The IUA said that transport managers should be able to self-certify:

In the early stages of HARPS development, where transport managers would have limited specific experience, it would be feasible to ask transport managers to provide a detailed safety case to demonstrate their professional competence in running an automated service.

³³ CP2, paras 4.67 to 4.71.

4.74 By contrast, SMMT stressed the importance of independent certification:

Transport managers should not be able to self-determine their professional competence. They should instead be required to demonstrate adherence to a common core competencies scorecard by way of periodic assessments aided by regular training.

4.75 Several respondents saw a need for formal courses and examinations. For example, Stagecoach group plc said that “professional competence requires suitable qualification (Transport Manager CPC) and a sound knowledge of the operation”. UK Computing Research Committee (UKCRC) suggested “attendance at an approved course together with the successful completion of a summative assessment”. AXA asked for “a specific CPC for automated vehicles that can be applied for, monitored and renewed in a similar way to current CPC qualifications for a lorry, bus or coach”.

4.76 Similarly, Stevenage Borough Council said:

Examinations should be put in place, and could be supported by interviews and other demonstrations of relevant experience, expertise and interest e.g. C.V., professional memberships, submission of competency based method statements.

4.77 CPC thought that courses could be provided:

On the technology side, there are already Masters courses available in Connected Autonomous Vehicles offered by universities such as Cranfield University and the University of Warwick, and the Connected Places Catapult has worked with the Institute of Engineering and Technology to develop online courses in this area. More specialised courses could be made available by vehicle technology developers and vehicle manufacturers. The Transport Manager may benefit from completing such courses.

4.78 Police Scotland also argued in favour of courses:

A system of training and accreditation should be implemented, to ensure transport managers are provided with the correct knowledge to run an automated service. It is reasonable to assume that computer-based technologies, simulators and interactive devices will allow transport managers to gain competence in a safe learning environment prior to receiving accreditation to run a “live” system.

The required skills

4.79 Several respondents thought that current transport management skills would continue to be relevant. For example, Horwich Farrelly and Aviva pointed to the current requirements for PSVs.

4.80 Others stressed skills in the technology and in the checks required to ensure it is roadworthy.³⁴ For example, Amey Consulting said:

³⁴ These included ALBUM, Heather Bradshaw-Martin (Humanity in Motion Ltd and Perkins Engines Company Ltd), Dean Hatton (NPCC) and Georges Economides (Oxfordshire County Council).

Just because they have been a transport manager for traditional passenger services does not mean that they should be considered as competent for automated services.

- 4.81 Additional skills were mentioned. Georges Economides (Oxfordshire County Council) highlighted that transport managers should be required to show not just technical competence but also the ability to “deal with customers and local stakeholders”. Anxiety UK suggested that, in addition to any technical knowledge, regard should be had to metrics relating to disability and accessibility.
- 4.82 London Living Streets and Hackney Living Streets said that the system needs to contain the possibility of imposing sanctions on transport managers, “including potential criminal/corporate manslaughter charges if negligence is demonstrated”.

Alternatives to transport managers

- 4.83 Five recommended against a transport manager, arguing that the approach used in rail and aviation was more relevant:

We should therefore avoid shoehorning HARPS operations into the model used to license and operate buses and taxis when the technical complexity is likely to be closer to that encountered when operating a rail service. With that in mind, rather than a transport manager, it may make more sense to require the HARPS operator to have in place a Safety Management System.

- 4.84 It pointed to advantages in adopting a safety management system:

A proper safety management system would show which persons are responsible across the organisational hierarchy and also how the HARPS operator manages the many operational safety requirements that are hinted at by the 'transport manager' role (for instance, operational safety of the service; roadworthiness of the vehicles; handling emergency situations and disruption to the fleet; and so on and so forth). This approach would ensure that HARPS operators develop the required safety culture and that satisfying the relevant requirements does not become a reductive, box-ticking exercise.

- 4.85 Kennedys Law LLP suggested an approach similar to the Financial Conduct Authority's Senior Manager and Certification Regime:

HARPS operators would be required to identify a senior manager, ultimately responsible for the safety compliance of the HARPS vehicle(s), and to whom a sub-category of senior staff would report to in respect of the specific elements necessary to achieve that compliance. ... The operator should be required to demonstrate that it has taken and will proactively take substantive action to ensure passenger safety.

ENSURING ROADWORTHINESS

Q9: Do you agree that HARPS operators should: (1) be under a legal obligation to ensure roadworthiness; and (2) demonstrate “adequate facilities or arrangements” for maintaining vehicles and operating systems “in a fit and serviceable condition”?

- 4.86 Out of 77 respondents, 72 (94%) agreed with this proposal. Five respondents (7%) said other and no-one said no.

- 4.87 Most agreed outright, describing these as “rudimentary requirements” for operators.³⁵ As Intel Corporation (and Mobileye, an Intel Corporation company) explained:

It is difficult to imagine which actor other than the HARPS operator would have the responsibility and legal obligation to ensure roadworthiness, including by making sure that the vehicles are duly inspected according to periodical technical inspection rules.

- 4.88 Some respondents suggested that these requirements should be a starting point, with more detailed requirements for HARPS operators fleshed out, for example, in case-law.³⁶ The Freight Transport Association (FTA) said that the Department for Transport should engage with trade associations to help agree the definition of what constitutes “reasonable measures”.
- 4.89 Amey Consulting suggested that the DVLA should be responsible for conducting regular checks of operators to ensure that they are complying with these obligations.

Roadworthiness

- 4.90 The British Insurance Brokers' Association (BIBA) considered the meaning of the term “roadworthy” to be unclear in the context of HARPS vehicles:

What is meant by ‘roadworthiness’ may need new consideration. Vehicles need not just to be mechanically sound, but their software needs to be current. A future MOT could look quite different. Who is responsible for software updates? And where does the line fall between the operator and the manufacturer? The cyber resilience of the operator’s establishment is also a consideration.

- 4.91 TfL expressed a similar view:

We are unsure how exactly roadworthiness will be determined. Questions that will need further thought are: Should there be specific elements in the design of the vehicle that need to be mandated? What additional details need to be captured by the licensing administrator body so that local authorities and insurance companies are confident with [the operation of HARPS]?

- 4.92 AID GmbH suggested that roadworthiness could be determined by periodical technical inspections distinct from current MOTs:

The legal obligation to ensure road worthiness could be mandated by a modified scheme of periodical technical inspection (that would be different than the MOT for conventional vehicles).

- 4.93 SMMT said that the obligations on HARPS operators should not preclude contractual arrangements dividing responsibilities between the operator and the Automated Driving System Entity (ADSE) that would:

Allow for the possibility of contractual agreements – and the implied shared responsibilities – between the HARPS operator, the automated driving system entity

³⁵ See Dean Hatton of the National Police Chiefs Council.

³⁶ See, for example, Richard Sarginson.

(ADSE) and/or the vehicle (hardware) manufacturer, assuming all three are different entities, to jointly maintain the vehicles and operating systems;

Consider the different capabilities of HARPS vehicles to self-diagnose and in the future potentially self-rectify problems;

Clarify such responsibilities in greater detail, as the previous consultation paper did with regard to the user-in-charge; and

Ensure the requirements are not overly onerous such that technical progress may be hindered.

- 4.94 WMG, University of Warwick, drew attention to the need for a vehicle to be roadworthy in the conditions prevailing in the operational design domain on a given day:

While HARPS operators may demonstrate roadworthiness on a given day, we need to complement this requirement to cater to changes in the environment. For example, a pod may have been certified as roadworthy for a given Operational Design Domain (ODD). If there are changes to its ODD on a given day which it is incapable of handling, (e.g. road works on the pre-defined route), the pod is no longer roadworthy. Therefore, there is an implicit requirement to monitor the ODD to ensure roadworthiness and safe operation.

Adequate facilities for maintaining vehicles “in a fit and serviceable condition”

- 4.95 Most respondents agreed with this requirement without further comment. Heather Bradshaw-Martin (Humanity in Motion Ltd and Perkins Engines Company Ltd) said that “adequate facilities” should include:

climate and light controlled (to test sensors) workshops with suitable supplies of 12v and high voltage (for electrical vehicles) power as well as facilities for charging and docking laptops for analysis or transmission of large - potentially very large - quantities of data. Fault finding may take some time and side of the road exposed to the elements working is not conducive to reliable work.

- 4.96 A few respondents, however, queried whether HARPS operators would be able to maintain facilities of this type. As Intel Corporation (and Mobileye, an Intel Corporation company) said, “these vehicles will not necessarily operate with a driver and will not necessarily return to a base”. Burges Salmon LLP added:

We would query whether these obligations should necessarily lie with all HARPS operators if, for example, a HARPS operator has contracted for vehicles and services with other HARPS operators to be made available essentially on a booking platform.

CLARIFYING THAT HARPS OPERATORS ARE “USERS”

Q10: Do you agree that legislation should be amended to clarify that HARPS operators are “users” for the purposes of insurance and roadworthiness offences?

- 4.97 In the Consultation Paper we explained that PSV operators are considered to be “users” for the purposes of insurance and roadworthiness offences under the Road Traffic Act

1988. We asked if clarification was needed that HARPS operators would also be users, so as to be criminally liable for failing to insure vehicles or maintain roadworthiness.

- 4.98 Most people agreed. Of the 71 people who engaged with this question, 59 (83%) said “yes”; 10 (14%) said “other” and only two said “no”.

Agreement

- 4.99 IAM RoadSmart described this as “a logical requirement to ensure operators are prosecuted for any problems that occur”, given that passengers cannot be defined as users. The Faculty of Advocates explained that without this clarification it would remain unclear who the relevant user is for the purposes of insurance and roadworthiness:

Without there being explicit clarification that a HARPS operator is a “user” for these purposes, then there is a danger that there will be a regulatory vacuum, resulting in possibly inadequate protection of passengers and other road users.

- 4.100 TfL adopted similar reasoning:

We agree that the law should be similarly amended to clarify that HARPS operators are ‘users’ for the purposes of insurance and roadworthiness offences. This clarification would be in line with the approach of placing the ultimate responsibility of the safe operation of HARPS with the operator.

Concerns

- 4.101 Some respondents thought that the term “user” was inappropriate in the context of HARPS. As ITS UK put it:

The way insurance and roadworthiness are enforced needs to change to accommodate this new mobility, not the other way round. This needs to be redefined, rather than fitting into an existing “user” category concept. HARPS operators may not be the user, in some cases the user should be protected suitably by the HARPS operator.

- 4.102 Transport for West Midlands (TfWM) was concerned that the term “user” in the context of HARPS would be confused with the term “user-in-charge” in the context of automated vehicles generally.

- 4.103 WMG, the University of Warwick suggested that the ADSE rather than the HARPS operator should be responsible for insurance and roadworthiness. Heather Bradshaw-Martin (Humanity in Motion Ltd and Perkins Engines Company Ltd) added that “operators may find insurance difficult, at least initially, especially if insurers do not agree with the approaches to safety and accident prevention taken by ADSEs”.

LEGAL OBLIGATIONS ON HARPS OPERATORS

Q11: Do you agree that HARPS operators should have a legal duty to: (1) insure vehicles; (2) supervise vehicles; (3) report accidents; and (4) take reasonable steps to safeguard passengers from assault, abuse or harassment?

4.104 Of the 102 respondents who engaged with this question, most (77) said “yes”, and 15 answered “other”. No-one said “no”. However, many respondents who said “yes” added caveats to their agreement.

Insurance

4.105 Under the Automated and Electric Vehicles Act 2018, automated vehicles must be insured, with the insurer initially liable any damage caused by the automated vehicle.³⁷ However, the 2018 Act does not specify who has the duty to insure, in the absence of a “user” in the driving seat. We proposed that the duty should lie with the HARPS operator.

4.106 Most respondents agreed. For example, the RAC Foundation agreed that HARPS operators should have a legal duty to insure their vehicles:

Insurers will be able to assess the risk to/of these vehicles once the regulatory framework is clear and once these vehicle types have been fully tested for use on public roads.

4.107 TfL said that HARPS operators should “not only be legally responsible for insuring the vehicles but also checking the extent and relevance of the cover and monitoring the dates of expiry for each vehicle”.

4.108 Richard Morris (Innovate UK) said that HARPS operators should have an obligation to insure vehicles if they own them. By contrast,

Where the HARPS operator is NOT the vehicle owner, they must take sufficient steps to ensure that the owner has insured the vehicle and the insurance remains in place.

4.109 By contrast, BIBA said that the operator should be responsible for insurance, including where vehicles were subject to a leasing arrangement. They foresaw:

A huge upsurge in the numbers of vehicles leased compared to those owned, not least because of the likely high cost of level 4 and 5 vehicles compared to those at levels 0, 1 and 2. If responsibility for the arrangement of insurance is on lessors, there is a risk that just a few large leasing companies own the market not only for vehicles, but also in the arrangement of insurance. Such a restriction in competition would be detrimental to the end-users who would have little control over the cost.

4.110 Kennedys Law LLP agreed that HARPS operators should have a duty to insure vehicles, and this should include risks relating to cyber security. They listed in detail the main cyber risks involved, from a traditional breach of personal data to ransomware attacks and connection risks, as well as manipulation of safety-critical systems:

³⁷ For a full account of this liability, see CP1, Ch 6.

If the public perceive HARPS to have systematic cyber related risks, which could pose a threat to their safety, then use of the transport is at risk of being lower than conventional methods of transport.

Supervision

4.111 In Consultation Paper 2 we proposed that HARPS operators should ensure that their vehicles are adequately supervised. At its most basic, this means that operators should know where their vehicles are and (if stopped in inappropriate places) should remove them. We said that supervision will not necessarily involve a human sitting in front of a bank of screens, though many developers are working on this basis. If so, it raises many issues about how connectivity is maintained, how many vehicles can be supervised at any one time, and how supervisors are trained and remain alert.

4.112 Many respondents agreed that supervision raised major challenges. TfL explained:

Operators should also have a legal duty to adequately supervise their vehicles at all times as well as ensure that remote-control centre staff are trained to mitigate and respond safely to any connectivity or control issues, as CCAV's Code of Practice recommends. It would be a good idea that the body responsible for the new licensing scheme develops some guidance or standards on how supervision can be performed in an effective and safe way.

4.113 RoSPA highlighted concerns about connectivity and cyber-security. It also pointed out that supervisors would need training to remain alert:

This may be difficult in an environment where staff have a passive role for the majority of the time, interspersed with safety critical situations where they must be alert to make a decision for the vehicle Staff will also need to be trained in how to deal with situations in which the vehicle brings itself to a stop to mitigate risk, such as providing assistance to passengers and in some cases, contacting the emergency services.

4.114 Stewarts Law LLP highlighted the many questions involved:

For example, how should the remote supervisors consider and respond to multiple accidents? At what point should a call be escalated to a manager, supervisor, or technology provider? Should they contact the accident investigators immediately? What if the vehicle has simply broken down suffering a technology failure? How should the vehicle be moved and how would passenger safety be assured?

4.115 It also asked whether a supervisor could be held “contributory negligent” in the event of an accident. The Association of Personal Injury Lawyers (APIL) were also concerned about supervisor liability. It felt that under the Automated and Electric Vehicles Act 2018, liability may not be clear for the purposes of insurance.

4.116 Barristers at Temple Garden Chambers said that it was too early to recommend a duty to supervise vehicles:

Perhaps remote supervision will no longer be viewed as a sensible way to move forward in five years' time, on account of its challenges. We simply do not know, and

on this basis it would be premature to recommend or discount the possibility of such a duty.

The duty to remove defective vehicles

4.117 Several respondents suggested a specific requirement to remove vehicles. As the RAC said:

Supervisors should also have responsibility to contact a roadside rescue and recovery organisation should vehicles break down. The risk of not making this explicit is that HARPS vehicles remain stranded at the roadside with passengers.

4.118 Similarly, P. Whitfield Consulting Ltd said that the task of removing vehicles should not fall on public authorities:

It should not fall to the police or local highway authorities to arrange removals, but it is possible that existing public contracts can be amended to add in private services with charges back to operators.

4.119 Heather Bradshaw-Martin (Humanity in Motion Ltd and Perkins Engines Company Ltd) drew attention the practical difficulties in removing vehicles:

Electric vehicles may have towing speed restrictions, and safety and security features can fail so as to immobilise the vehicle. I have observed cars having to be loaded onto flatbed lorries using skids which are directionally unstable. Operators and rescue companies such as the RAC and AA will need to have agreed with the ADSEs what the worst-case vehicle movement procedures and security needs are so that vehicles which are "bricked" unexpectedly, by failure or vandalism, can be promptly moved. This becomes more difficult the larger the vehicles.

Reporting accidents

4.120 The obligation to report accidents was seen as uncontroversial. As the Law Society of Scotland pointed out, it is already a criminal offence for drivers not to report an accident. In the absence of a driver, it was accepted that the obligation should be placed on the HARPS operator. Several respondents stressed that the obligation should also extend to near misses, an issue discussed below.

4.121 UKCRC said that there may also be a case for extending the duty to report accidents to passengers, who might be more aware of what occurred.

4.122 Five said that consideration should be given to: the appropriate mechanisms for reporting; the format of the information to be provided; and whether any obligations should also be placed on the passengers in a vehicle. It also drew attention to the importance of data in dealing with accidents. Similarly, Stephen Mason thought that the digital evidence related to accidents needed specific consideration. We intend to return to the data needed to respond to accidents in Consultation Paper 3.

Safeguarding passengers

4.123 In the Consultation Paper, we proposed that HARPS operators should have a legal duty to take reasonable steps to safeguard passengers from assault, abuse and harassment.

4.124 This issue divided opinions. Some respondents saw safeguarding as crucial:

Risk to safety is one of the key deterrents to using public transport, especially for vulnerable people. As such, it is important that measures are taken to ensure passenger safety and to provide passengers with the confidence to use the service, so that longer-term goals of rejuvenating public transport usage can be achieved. [Community Transport Association]

Certainly, the operator shall have the means to safeguard passengers from assault, abuse or harassment. These means could then be regulated, implemented by the HARPS developer and form part of the assessment scheme at the time of vehicle system certification. [AID GmbH]

4.125 Others thought that operators should not be held responsible for assaults by other passengers. As Pinsent Masons LLP said:

Although we understand that it is necessary to ensure passengers' safety, operators cannot be held liable for harassment incidents for which other passengers are responsible for. Because of this we consider operators should not be under an obligation as described. Instead, we consider that HARPS operators of vehicles with more than 8 spaces should be under an obligation to install CCTV.

4.126 The CPS was concerned by the suggestion that there should be a specific requirement that HARPS operators should take reasonable steps to safeguard passengers beyond the generally applicable duty of care towards them:

The only way we can envisage HARPS operators being able to fulfil this duty is by installing CCTV in every vehicle. This would give rise to questions over the proportionality of such a measure. If audio recordings were also to be introduced then this would create further difficulties as to how to balance passengers'/users' privacy rights and the data protection implications that would follow if the CCTV or audio recording was needed in a criminal prosecution for example.

4.127 Many respondents queried our use of the term "reasonable", which was inherently uncertain. As the Mobility and Access Committee for Scotland (MACS) said:

The wording 'reasonable' steps should be removed because safeguarding should be at the heart of passenger care and the words 'reasonable' steps have proven problematic in other legislation because whatever is regarded as reasonable can only be determined by a court of law.

4.128 The Law Society of Scotland, while supporting the requirement, expressed a similar concern:

Reasonable steps are not necessarily a high standard and there would be questions as to what this means in practice.

4.129 Respondents made a variety of suggestions for how passengers could be protected in shared vehicles. These ranged from hiring stewards to placing CCTV in vehicles:

This will be particularly important for vulnerable groups, such as unaccompanied children, the disabled and the elderly. This could include employing humans in the vehicle to act as “stewards”. If this is the case, these stewards must undergo criminal record checks before being alone with passengers in these vehicles. In the absence of stewards, CCTV could also be installed in vehicles. [RoSPA]

I would also like to see some HARPS vehicles offered where individual passengers are partitioned from each other and those partitions can only be lowered by agreement of all passengers involved. [Richard Morris (Innovate UK)]

4.130 Bosch described a range of possible solutions:

There could be solutions only providing a “panic button” inside the vehicle, all the way up to full CCTV interior monitoring and real-time machine learning-based analysis of said imagery to automatically alert external staff if an assault, abuse or harassment situation is detected by the real-time analysis.

4.131 Uber told us that it is:

developing complementary features -- such as a Rider Assist customer support function -- which could (for example) provide advice to riders in the event of an emergency or provide additional inputs to the system to respond to real-time imperatives.

4.132 Richard Sarginson explained that CCTV systems would need to provide high quality images and sound from multiple cameras and microphones to provide an evidential quality system. He also posited that the remote supervisor might have the power to “divert the HARPS to the nearest police station, or for a medical emergency to a hospital or ambulance station”.

4.133 GoBike wrote that “no amount of CCTV can replace the human contact so many people need when travelling” and rejected the idea that HARPS could function without onboard staff.

4.134 Several respondents (including the British Parking Association (BPA)) thought that guidance could be obtained from experience in aviation and rail, to establish what would be “reasonable” for HARPS operators. Finally, Safe Kids Worldwide expressed a unique point about safeguarding children who use such services, highlighting that this needs special consideration:

UK law doesn’t say an age when a child can be left on their own, but it’s an offence to leave a child alone if it places them at risk. The potential absence of a driver in vehicles capable of full autonomy might tempt some parents to allow children to travel unattended. They might perceive this to be safer than using conventional taxis or other public transport. It may be necessary, therefore, to legislate for conditions under which this is allowed. Responsibility would need to be assigned for safeguarding the child in the vehicle and the nature that might take (e.g. monitoring and communication), as well as restraint use.

REPORTING UNTOWARD EVENTS

Q12: Do you agree that HARPS operators should be subject to additional duties to report untoward events, together with background information about miles travelled (to put these events in context)?

4.135 76 respondents engaged with this question, with 54 (71%) expressing support; 20 (27%) said other and two said no.

Agreement

4.136 Most people supported the proposal on the ground that it would increase safety and help learning within the industry.³⁸

4.137 AXA highlighted the importance of data to insurance companies:

To an insurer, data is vital to establish liability in an untoward event and for accurate risk modelling... AXA would recommend closer interaction between providers and insurers. AXA believe this will create a "self-regulated" environment where insurers can provide safety insight to carriers and regulators.

4.138 HORIBA MIRA added that recording miles travelled was relatively easy:

Recording miles travelled is not an onerous task and could easily be done automatically by the vehicle (including separating out any miles that were not driven autonomously). This would make statistical analysis of performance far more feasible.

Concerns

4.139 Several respondents saw a need to balance data sharing with commercial confidentiality:

Care should be taken to achieve the right balance between requiring operators to share information that is relevant to safety and security of operations versus information could be considered commercially sensitive. [Reed Mobility]

It could be commercially sensitive and offered to competitors so they offer services to compete. If I was an operator I wouldn't want to give this data if this was the case. [Amey Consulting Ltd]

4.140 Respondents also expressed concern at the unclear definition of "untoward event":

We are unclear as to what constitutes an 'untoward event' and require a clearer definition. This could be interpreted as a near miss (which should be reported), a bag left on a seat, or abuse of a rider or a near collision with other road user or property. [Aviva]

³⁸ See responses from Heather Bradshaw-Martin (Humanity in Motion Ltd and Perkins Engines Company Ltd), ALBUM, Horwich Farrelly and P. Whitfield Consulting Ltd.

It is unclear how an 'untoward event' is defined in the context of AVs; while this term is common in the medical profession (see NHS definition), it would need to be defined in the context of transport if to be used further. [TfL]

We agree with the principle of reporting untoward events, although we acknowledge the challenge in defining such events in a manner that they are comparable between different systems. [CPC]

- 4.141 Garry Staunton (UK Atomic Energy Authority) said that the collection of near miss data is commonplace in the aviation industry. However, they raised several further questions that need to be addressed, including who will be responsible for collecting, storing and analysing such data. Others expressed similar concerns:

A system needs to be in place that systematically and automatically changes features of AVs and operating systems when faults or anomalies are discovered. [London Living Streets and Hackney Living Streets]

Additional considerations include how this information might be made more widely available both to relevant safety agencies, to other HARPS operators and to the research community working to improve the safety performance of highly automated vehicles. [UKCRC]

- 4.142 Oxbotica agreed that there should be some data sharing obligations (provided that there was a clear definition of untoward event) but disagreed that operators should report the overall miles travelled.

- 4.143 Wayve rejected the proposal, on the basis that the data which would be shared would be of little use, and that companies should be free to choose what data to provide:

Reporting metrics such as intervention rates (currently used by the California DMV) are poor indicators of performance, requiring significant context to interpret until these reach sufficient scale to be comparable with human-driven population statistics.

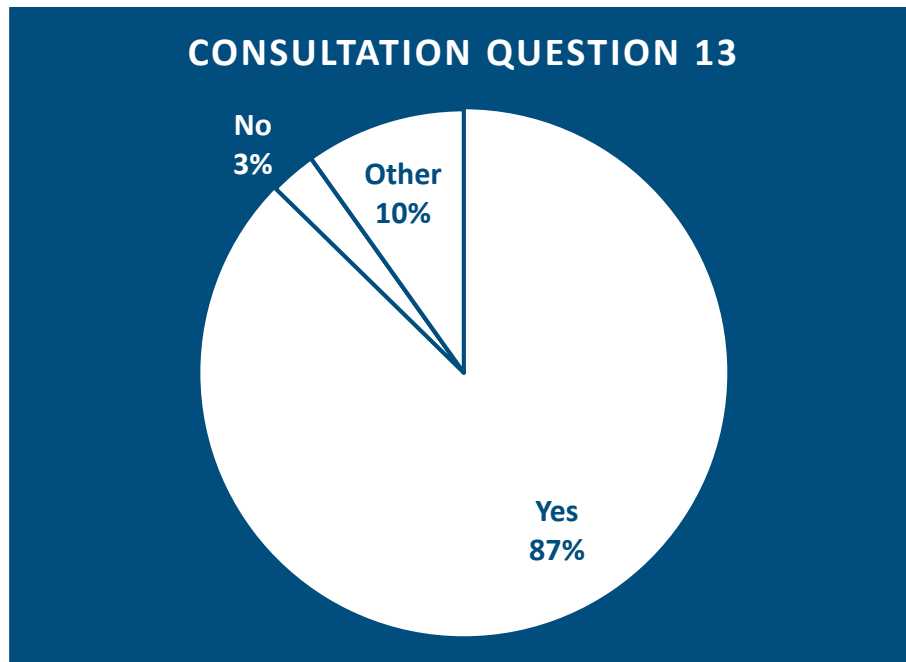
- 4.144 DAC Beachcroft LLP highlighted that data protection laws will apply to HARPS operators, who will be controllers of personal data. In a detailed response, it outlined the many obligations on HARPS operators under the General Data Protection Regulation 2018 and associated legislation. We intend to return to this issue in Consultation Paper 3.

BROAD DUTIES COUPLED WITH STATUTORY GUIDANCE

Q13: Do you agree that the legislation should set out broad duties, with a power to issue statutory guidance to supplement these obligations?

- 4.145 In the Consultation Paper, we noted that PSV legislation was set out in broad terms, with much of the detail left to statutory guidance. We proposed a similar approach for HARPS, to provide flexible regulation, which can learn from experience.

- 4.146 There was strong support for this approach. Of the 71 respondents who engaged with this question, 62 (87%) supported broad duties combined with guidance. Only seven (10%) said other and two said no.



Agreement

4.147 Many respondents emphasised the importance of flexibility and learning from experience:

This is sensible when dealing with new technologies with no experience and track record to fall back on. Statutory guidance promoting best practice issued under a statutory power will give flexibility and the ability to update and amend the guidance to respond to experience and knowledge gained. [Senators of the College of Justice (Scottish Court of Session judges)]

Given the uncertainty regarding this technology, the legislation will need to be adaptable to allow for changes and developments which can be done through the continued use of statutory guidance. [Horwich Farrelly]

The operator licensing legislation sets out broad duties with a power for the Senior Traffic Commissioner to issue statutory guidance and statutory directions. Similarly, section 16 of the Health and Safety at Work Act 1974 sets out Approved Codes of Practice which can be continually updated without the need for Parliamentary time or approval. These two practices currently work well in providing the guidance and being able to respond to changing circumstances or case law. [Office of the Traffic Commissioner]

Yes we agree. This has the benefit of flexibility and 'future-proofing' duties as they can be adapted as our understanding of the technology and its operation develops. [CPS]

4.148 Many respondents stressed that guidance should be developed in close consultation with developers and local authorities:

The duties and guidance should be created in close consultation with technology developers and local authorities to ensure that the information is fit for purpose. [Reed Mobility]

The emphasis would rightly be on statutory guidance been developed and updated as knowledge increases. The guidance updates would also allow stakeholders to retain influence. [P. Whitfield Consulting Ltd]

Concerns

4.149 There was some concern about the uncertainties involved in “broad duties”. Bosch supported the idea of “broad duties” so long as the legislation “is useful and not so abstract that it’s meaningless; a business cannot sensibly price-in the full requirements for a use-case if there is insufficient understanding of its obligations”.

4.150 Similarly, Kennedys Law LLP cautioned:

The broader the duty the more likely parties will become engaged in lengthy and costly litigation. There needs to be clarity in the applicable duties before HARPS are put into operation on UK roads.

4.151 SMMT answered “no”, arguing that detailed legislation was needed to achieve certainty:

Legislation should set out duties in a manner conducive to legal certainty and that is sufficiently detailed. A HARPS operator cannot sensibly account for the full requirements of a use case if there is insufficient understanding of its legal obligations.

PRICE INFORMATION

Q14(1): Should the agency have the power to issue guidance about how to provide clear and comparable price information?

4.152 In the Consultation Paper we noted that taxi fares are often regulated while private hire fares are not. This is because consumers who hail a taxi in the street or take the first taxi at a rank often lack information to make price comparisons, whereas those who pre-book can shop around. We did not propose that HARPS fares should be regulated in the same way as taxis. Instead, we thought that clear and comparable price information should be available to consumers before they book.

4.153 We asked if the HARPS regulator should have power to issue guidance about this. Of the 58 people who engaged with this question, 40 (69%) agreed; 18 (31%) said other and no-one said no.

Agreement

4.154 Most respondents agreed with the proposal. As IAM RoadSmart said:

Transparency of pricing is a key requirement for any customer choosing a service. MaaS services will also require to be able to offer price comparison so such data sharing is essential.

4.155 Many pointed out that such requirements already exist for buses and taxis, so should also apply to HARPS:

Price information are already published by many operators. Forthcoming rules under BODS will enforce this. There should be an equality between the bus and HARPS. [Association of Local Bus Managers (ALBUM)]

This follows the principles of the recent Bus Services Act and bus open data, and is an essential requirement for all future mobility services. The information is required to incorporate into travel planning and ticket selling platforms. [ITS UK]

Clear and transparent pricing structures should be available, like the schemes used for taxis and in some instances private hire vehicles. Local authorities have powers presently to regulate the use of these kinds of activities and they could be adapted for HARPS. [BPA]

4.156 Respondents also said that transparency is good for passengers:

Clear pricing enables passengers to adequately budget and prepare for journeys, and prevents incidents where they might be left stranded or unable to travel safely due to budget constraints. [Suzy Lamplugh Trust]

There is a concern that if there is no transparency as to prices, consumers would not be able to choose the best option available to them. [Pinsent Masons LLP]

Setting requirements for the display of pricing could make it easier for consumers to quickly compare providers and make more informed decisions. [KPMG LLP]

4.157 The Urban Transport Group highlighted several dangers with leaving pricing “to the market”. These include:

The dangers of predatory pricing in order to undermine the operation of more conventional public transport (with its regulated fares);

The implications for concessionary fares schemes for various low income or disadvantaged groups which public transport provides and the absence of which for HARPS could be used to compete in a way which eliminated the public transport provision which those groups rely on;

How this relates to the preference of the public for simple and integrated pricing structures for collective transport provision in large urban areas (such as Oyster in London).

Concerns

4.158 The main concern was that regulation should not restrict operators from choosing their own pricing structures:

HARPS operators should have considerable flexibility in how they operate their pricing structure (provided that this is clear to consumers). [Reed Mobility]

Transparent pricing at a trip level is good for the consumer and will improve market competitiveness... However, we value the ability to choose what and how we present this pricing information to a potential consumer. [Wayve]

4.159 Several respondents preferred to keep pricing obligations “high level” so as not to deter pricing innovation.³⁹

4.160 Both SMMT and the Bar Council thought that pricing issues were more appropriate for trading standards and the Competition and Markets Authority (CMA) rather than the operator licensing agency. The Bar Council said:

The CMA investigated and obtained statutory undertakings from traders on price transparency in the car hire industry (2017) alluded to in the Law Commission’s consultation (para 3.69) and hotel booking websites... Trading Standards are well versed in investigating and enforcing pricing complaints.

Difficulties in providing comparable information

4.161 Some respondents pointed to the difficulties in providing comparable fares. As the Urban Transport Group said:

If HARPS include taxi-type services and bus type-services, fare structures and business models could be very different and hard to compare. For example, taxis may charge per mile and vary charges depending on time of day. Bus-type services may charge a single price for all-day travel. Both may vary their fares depending on the time of day. HARPS may generate an even more complicated picture if they adopt a more demand-responsive, agile service – varying routes and fares depending on how many people want to travel and the drop-offs along the way.

4.162 DAC Beachcroft LLP was concerned that HARPS operators might rely excessively on their online and mobile phone presence:

Online and mobile transactions are excellent resources, but our concern arises because this could adversely affect the elderly, who would benefit greatly from HARPS. All price information and booking facilities should be available to consumers in a variety of media, e.g. online but also by telephone, so that the elderly can more comfortably use the service.

4.163 KPMG LLP suggested following the US approach⁴⁰:

Retailers are required to display a product’s price per unit or price per weight in order to provide more comparable pricing across products. A similar concept could be applied to HARPS where even though different operators may have a different price per mile or price per minute, the operators could be required to display this cost along with an estimated total cost for the trip.

³⁹ These included the SAPT, CPC, FTA and Heather Bradshaw-Martin (Humanity in Motion Ltd and Perkins Engines Company Ltd).

⁴⁰ The EU also has requirements related to the indication of prices. See Directive 98/6/EC of the European Parliament and of the Council of 16 February 1998 on consumer protection in the indication of the prices of products offered to consumers as amended by Directive (EU) 2019/2161, Official Journal L 80 of 18.3.98 p 27.

SANCTIONS FOR FAILING TO GIVE PRICE INFORMATION

Q 14(2): Should the agency have the power to withdraw the licence of an operator who failed to give price information?

4.164 Responses to this question were mixed. Out of 55 respondents who engaged with this question, 30 (55%) said “yes”, 21 (38%) said “other” and four (7%) said “no”.

4.165 Some respondents agreed with the proposal outright:

The HARPS operator licensing agency should have the authority to require operators to provide price information about their services and to withdraw the licence of an operator in case of failure to comply. There is no compelling competitive or other rationale for mystery in HARPS pricing. [Goggo Network]

Clear and comparable price information is vital to building public confidence in HARPS as a transportation and mobility service. Because of this, the HARPS operator licensing agency should have the power to issue guidance and withdraw licences for failing to give price information. [DAC Beachcroft LLP]

4.166 However, many respondents said that licence withdrawal should be a last resort. In most cases a warning or enforcement notice would be sufficient.

This seems like a reasonable response, although there should be potential to give warnings or apply less severe penalties for less severe infringements [HORIBA MIRA]

MACS believe that there is a need to regulate to have an equitable tariff across the country. However, the licence should not be withdrawn on a first offence but should remain as the ultimate penalty for persistently not giving pricing information. [MACS]

Any withdrawal of licence power should be the last step in an escalating regulatory enforcement process involving improvement and enforcement notices, with the agency making clear at each stage the specific remedial steps required; and plainly pricing information of this nature is only directly applicable to services that do in fact charge separate fares in a conventional sense. [London Living Streets and Hackney Living Streets]

4.167 Several developers described the sanction as “heavy handed” or disproportionate. As Intel Corporation (and Mobileye, an Intel Corporation company) said:

Withdrawing the license of operators seems disproportionate in this case. In the first steps of the deployment of HARPS services, some operators could make errors due to the fact that the market is new. A threat to withdraw the license could discourage potential operators to enter the market.

4.168 CPC thought it would discourage innovation:

Whilst we agree with the general principle of what the powers are seeking to achieve, i.e. clear price information to customers, there could be a risk of constraining the business model through legislation prematurely. The theme of Mobility as a Service is developing methods of integrated ticketing and subscription-based offerings for

which it may not be necessary to provide the cost of individual journeys in advance.
[CPC]

4.169 Others described the power as unnecessary:

As long as there is an opportunity for fair competition and consumer protection via price transparency /comparison we would question whether these powers are needed in addition to what already exists. [British Vehicle Rental and Leasing Association]

Not sure why a consumer would use a HARPS vehicle with no pricing information attached to the service being provided. [Gemserv Limited]

It would be difficult, if not impossible, for an operator not to give pricing information and expect to obtain business and therefore the threat of licence withdrawal is probably largely unnecessary. [Tim Marlow Ltd]

WHICH AGENCY?

Q 15: Who should administer the system of HARPS operator licensing?

4.170 We did not express a view on which agency should administer the system of HARPS operator licensing. We said that this was not an issue for us. However, we welcomed observations, which we would pass onto Government.

4.171 This question attracted a range of responses. PSV licensing is currently administered by the Traffic Commissioners, and some respondents felt that they should also be responsible for HARPS. Others suggested the DVLA or Driver and Vehicle Standards Agency (DVSA). Some suggested that a new body should be set up with the specific expertise required in the context of HARPS. Finally, some respondents saw a need for local issues to be dealt with at local level.

Traffic Commissioners

4.172 Several respondents said that the Traffic Commissioners were the appropriate body:

It would seem sensible for the Traffic Commissioners to administer and enforce the legislative framework, given that they are adequately resourced. [ALBUM]

In my view, the responsibility for administering HARPS operator licensing should rest with the Traffic Commissioners - this seems more of a natural fit with regard to the provision of service and the need to respect the rights and needs of passengers.
[Reed Mobility]

Our tentative view is that the system of HARPS operator licensing should be administered by the Traffic Commissioners. They have a great deal of experience in the area of Goods Vehicle Operator's Licences and Public Service Vehicle licences. The licensing scheme for HARPS will involve similar principles and it makes sense for the same body to be applying those in respect of Automated Vehicles. [Bar Council]

4.173 Heather Bradshaw-Martin (Humanity in Motion Ltd and Perkins Engines Company Ltd) outlined four arguments in favour of the Traffic Commissioners, who:

1. already have expertise in logistical and public safety matters;

2. are less likely to be unduly influenced by manufactures/ADSEs as they are less likely to have a close relationship with them;

3. are more likely to be used to thinking in terms of the public good;

4. might be better calibrated for the types and frequency of incidents which happen currently.

4.174 Heather Bradshaw-Martin said that the contrary arguments were that the Traffic Commissioners might not possess the relevant technical expertise. However, this could be addressed by practical training and “the employment of a small number of technical advisers”. It also meant that an ADSE who also wanted to be an operator would have to deal with two bodies.

4.175 Stagecoach Group plc suggested “an enhanced Traffic Commissioner regime with additional resources and technical support”.

4.176 The Office of the Traffic Commissioner commented that for many issues “there is little practical difference” between using automated and conventional vehicles, as “the vehicles share a great deal of common components”. Furthermore, operators may well rely upon both types of vehicle. Therefore:

Splitting the regulation across several bodies presents an additional risk to ensure safety standards are maintained and would create a disproportionate burden on industry.

A new body with technological expertise

4.177 Five argued in favour of a new body:

While the Office of the Traffic Commissioner may appear to be an existing body with suitable governance arrangements, it does not have experience of anticipatory, flexible regulation for innovative services and has traditionally adopted a highly conservative, strongly compliance and enforcement-led approach. These characteristics may not promote the best interests of HARPS operators and customers and therefore we suggest that a new body may be appropriate.

4.178 John Rainbird also argued in favour of a new body that included existing expertise. He suggested that:

the administrator of HARPS operator licensing should be a distinct body which should include members from the Traffic Commissioners, with co-operation and joint working and access to the full resources of both bodies. This would provide a “one-stop shop” and should avoid some of the confusion and gaps in coverage seen, for example, in some financial regulation.

4.179 ITS UK said that existing centres of expertise, such the Centre for Connected and Autonomous Vehicles and Zenzic “should also be closely involved”.

Bringing HARPS and conventional service licensing together

4.180 The RAC Foundation pointed out that HARPS operators are likely to provide non-automated forms of transport as well. A single agency for transport licensing might therefore be appropriate:

The only view we'd offer on who should administer the HARPS licensing regime is that it is probable that at least some HARPS operators will also be running 'conventional' passenger services, so the DfT would be best advised to look at the future architecture of 'O' [Operator] licensing in the round ... (even if the conclusion is that the new regime should sit separate from the existing system).

Local concerns

4.181 Several respondents argued in favour of more local involvement. Oxbotica, for example, suggested that "local nuance of operational environment is a key factor. A new agency national structure with local representation would seem most appropriate".

4.182 TfWM said that "Traffic Commissioner areas may be too large for effectively monitoring and managing HARPS services on a local scale":

The Traffic Commissioner covering the West Midlands Combined Authority area also covers the wider West Midlands. This is a very large area with a wide range of rural and urban settings, each with local considerations. As a result, it might be difficult to effectively implement and monitor HARPS licensing across such a sizeable area, in a way that minimises localised impacts, especially on the mass transit network.

FREIGHT

Q16: We welcome observations on how far our provisional proposals may be relevant to transport of freight

4.183 Under our terms of reference, the Law Commissioners have been asked to focus on passenger transport. However, we asked how far our proposals might be relevant to freight.

Different considerations

4.184 Several respondents pointed to differences between passengers and freight. The FTA dealt briefly with this question, stating:

The operational functionality of freight is different to that of passenger transportation, especially regarding the connectivity and transportation of trailers, to what would be autonomous vehicles.

4.185 SMMT also thought that freight warranted separate consideration from HARPS:

Freight will require separate analysis that draws in part on the provisional proposals set out in this consultation paper. This is because a number of HARPS proposals are irrelevant, or will have to be modified, for freight, e.g. safeguarding of passengers, communication of pricing, role of transport managers.

- 4.186 The Road Haulage Association (RHA) considered that “matters relating to Operator Licensing are relevant” but noted that they felt, for the foreseeable future at least, heavy goods vehicles were unlikely to operate autonomously:

We do not envisage Heavy Goods Vehicles being Autonomous, until the loading and unloading of goods is automated or operated in such a way to provide total assurance of safety on road too.

Similarities

- 4.187 By contrast, other respondents pointed to similarities:

Requirements for maintenance of freight vehicles should be similar, so similar regulations and guidance could be used. Issues around passenger safeguarding would of course be irrelevant (replaced with concerns around theft of goods and transporting hazardous loads), as would the requirements for fair advertising of prices (as payment would presumably be according to a very different business model), but concerns about the safety of other road users, and the disruption they may face, are similar for freight applications. [HORIBA MIRA]

While the safety of passengers is not a factor in freight vehicle operations, the safety of other road users remains critical. Furthermore, it seems quite possible that unused passenger capacity could be efficiently used for the movement of goods in the same vehicle at off-peak times. This raises the interesting potential for a simple, dual purpose regulatory framework. The MPS would welcome the opportunity to contribute to further work in this area. [Metropolitan Police Service]

Freight transport should also have high standards, especially when considering their cargo can contain hazardous materials. This needs to be considered in the wider context of freight HARPS being present on the roads with persons only HARPS, and the potential consequences of such vehicles colliding. [Pinsent Masons LLP]

- 4.188 Some respondents pointed out that HARPS could be used to carry freight when they are not carrying passengers during off-peak hours:

There is potential for spare capacity within HARPS to be used to transport freight in order to make optimum use of the available space and opportunities connectivity presents for trip-chaining. [Urban Transport Group]

We believe a bulk of the considerations for HARPS for passenger services will remain same for freight as some HARPS may operator for passenger services in daytime and freight services in night time. [WMG, the University of Warwick]

THE WAY FORWARD

- 4.189 Many consultees stressed the importance of flexibility, as we cannot anticipate how HARPS will develop. The COVID-19 emergency has driven home this message: it is extremely difficult to anticipate and plan for the future. The aim of the proposed legislation is to provide a broad regulatory framework that can develop as new issues arise. We are encouraged by the support shown for a flexible approach. When we asked if the legislation should set out broad duties with a power to issue statutory guidance, the great majority of consultees (87%) agreed.

- 4.190 It is important to set the boundaries of the scheme. We note the concern that defining HARPS as “on a road” may be too narrow, and we will consider extending this to roads and other places to which the public has open physical access. We will also review whether to limit the scheme to those carrying passengers “for hire or reward”, as discussed in Chapter 5.
- 4.191 The responses show agreement that operators should be of good repute and professionally competent. They also show broad agreement with our outline of HARPS operator duties. These include maintaining roadworthiness; insuring vehicles; supervising vehicles; and reporting collisions and other incidents. We see these headings as forming the main substance of any draft legislation.
- 4.192 There was less consensus about how far HARPS operators should be obliged to safeguard passengers from assault, abuse and harassment by other passengers. There are still many difficulties in how passengers can be safeguarded in a shared space without a driver present. Concerns over sharing have been exacerbated by the COVID-19 emergency, suggesting that initial deployment of automated vehicles may be in small “pods” rather than larger shared vehicles.
- 4.193 Finally, consultees agreed that HARPS passengers need access to transparent price information before booking. We note, however, the mixed views on who should be responsible for enforcing transparent pricing and what the sanctions should be. We will return to this in our next paper.

Chapter 5: Private ownership

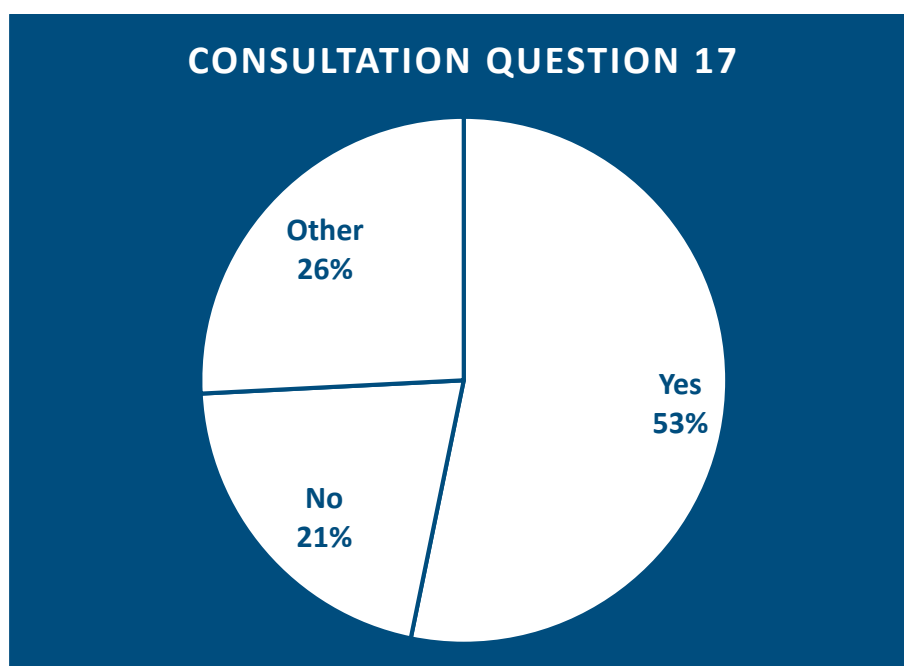
OVERVIEW

- 5.1 Consultation Paper 2 focussed on highly automated vehicles authorised for use without a driver or user-in-charge (passenger-only vehicles). Chapter 4 considered how to license operators using passenger-only vehicles to carry passengers for commercial purposes. In Chapter 5 we looked at passenger-only vehicles which are intended for private use. In the absence of a driver or user-in-charge, we considered who should bear legal responsibility for insurance, roadworthiness, installing updates and removing vehicles causing obstructions.
- 5.2 Our central proposal was that these responsibilities should fall on the keeper. Most respondents agreed: two-thirds (68%) agreed that the person who keeps the vehicle should be legally responsible, and three-quarters (76%) agreed that this should be presumed to be the registered keeper.
- 5.3 However, placing responsibilities on the keeper leads to many difficult boundary issues, particularly when a vehicle is leased. We suggested that a lessor should be regarded as a HARPS operator unless the vehicle is for the consumer's exclusive use for at least six months. Here only a narrow majority (53%) agreed, with many suggesting that "exclusive use" was unclear and six months was arbitrary.
- 5.4 In many long-term leasing arrangements, the lessor arranges to be registered as the keeper even though they have little day-to-day responsibility for the vehicle. We asked if there should be a procedure for transferring duties to the lessee, provided that the duties were clearly explained and the lessee signs a statement accepting responsibility. A majority of consultees thought there should be a transfer procedure but a significant minority questioned how it would work.
- 5.5 We asked about peer-to-peer (P2P) lending. Many consultees thought it would lead to loopholes in HARPS regulation: private individuals might lend vehicles in a way which goes beyond mere "social kindness" but does not amount to the business of "carrying passengers for hire or reward".
- 5.6 Operating passenger-only vehicles may be an onerous responsibility. We queried whether individuals would be able to meet the technical challenges of updating software, guarding against cyber-attacks and removing vehicles from the side of the road. We provisionally proposed a regulation-making power which could be used to require registered keepers to contract with a licensed provider for supervision and maintenance services. Most consultees (73%) agreed.
- 5.7 However, one theme emerging from the responses is that having so many rules and exceptions would be overly complex. Several consultees urged us to consider requiring all those who operated passenger-only vehicles to hold a HARPS licence, with lighter obligations ("HARPS-minus") on privately-owned vehicles which were not used to carry passengers commercially.

SETTING A BOUNDARY BETWEEN HARPS AND PRIVATE LEASING

Q17: Do you agree that those making “passenger-only” vehicles available to the public should be licensed as Highly Automated Road Passenger Services (HARPS) operators unless the arrangement provides a vehicle for exclusive use for an initial period of at least six months?

- 5.8 In the Consultation Paper, we noted the strong appeal of private ownership. Those unable to drive look forward to their own self-driving car. This is particularly true of people with disabilities that prevent or make driving very difficult. However, this did not necessarily mean that people would buy vehicles outright. We thought that many people would enter into leasing agreements, paying ongoing charges for use of a vehicle.
- 5.9 We saw a need to set a boundary between a HARPS provided for short-term hire and a leasing arrangement which was equivalent to private ownership. This boundary also arises in other contexts. For example, the British Vehicle Rental and Leasing Association makes a pragmatic distinction between “rental companies” which hire vehicles to customers for less than six months and leasing companies who provide vehicles on a more permanent basis.⁴¹ Similarly, section 66 of the Road Traffic Offenders Act 1988 sets out a special procedure to transfer liability for penalty charges which applies to hire agreements of less than six months.
- 5.10 On this basis, we provisionally proposed that lessors would need a HARPS operator licence unless the arrangement gave the lessee exclusive use of the vehicle for an initial period of at least six months.



- 5.11 Views were mixed. Out of 63 respondents, a narrow majority (32, or 53%) agreed. However, of these, 9 queried some aspect of the proposal (such as the definition of

⁴¹ BVRLA, Guide to Road Traffic Offences (May 2017) p 4,

exclusive use or the six-month time-limit. Similar issues were raised by 16 respondents (26%) who disagreed and 13 (21%) who answered “other”.

5.12 Many respondents addressed this issue in detail. The RAC Foundation described it as:

possibly the most interesting question that the consultation poses, since it goes to the heart of how far the individual citizen can reasonably be expected to ensure the safe roadworthiness of a highly automated system.

Agreement

5.13 Around 24 respondents supported the proposal without reservation.⁴²

5.14 Several respondents supported the idea that only leases with an initial period of at least six months would be excluded under our proposal.⁴³ For example, the Faculty of Advocates thought that private cars may well be leased “on a ‘streaming’ basis”. They explained:

These arrangements persist from month to month but are often and indeed are intended to be, indefinite but long term in their duration, possibly for years.

5.15 They also pointed out that, under our proposal, the consumers’ responsibilities would be so much less than under long leases. Therefore:

the public can benefit from the knowledge that an appropriate ‘person’ that can be relied upon, both regarding technical competencies and financial answerability, is behind the vehicle’s use on the road.

5.16 The Society of Motor Manufacturers and Traders (SMMT) agreed that a “subscription-based model” may become popular as people may not be:

confident enough to own them outright, but may still value the convenience, personalisation and, in some cases, luxury that high automation of this type offers.

5.17 However, SMMT added that “the timescale of six months could be made more flexible and may require further consideration”.

Concern about “exclusive use”

5.18 Many respondents asked what we meant by “exclusive use”. As DAC Beachcroft LLP said, “it is imperative that ‘exclusive use’ be properly defined in this context”:

Further thought needs to be given to how the provisions will account for vehicle sharing; particularly, in a more informal peer-to-peer environment.

⁴² Those who did not express disagreement with any part of the question included Bosch; the Scottish Association for Public Transport; ALBUM); Dean Hatton (National Police Chiefs Council); the Confederation of Passenger Transport; Stagecoach Bus Group; John Rainbird; Gemserv; Richard Morris (Innovate UK) and the International Underwriting Association.

⁴³ See, for example, responses from AXA and Kennedys Law LLP.

5.19 Similarly, the Freight Transport Association (FTA) felt that the question over-simplified a complex situation and that “exclusive use” was too unclear.

5.20 Several respondents queried whether the requirement for exclusive use might prevent lessees from allowing family and friends to use the car:

It is unclear what “exclusive use” entails but we assume that this intended to cover not only use by the lessee but by their family and potentially friends? [Burgess Salmon LLP]

The term ‘exclusive’ may limit usage from family members who typically share a car, especially as one of the aims of the Government’s vision on the future of mobility is to remove as many vehicles from the road as is feasible to do so. We do not believe this is the intention and so another attempt at this definition may be required. [British Insurance Brokers’ Association (BIBA)]

5.21 It was not the Law Commissions’ intention to stop consumers from allowing family and friends to use the vehicle. The requirement for exclusive use was aimed at arrangements which gave the consumer exclusive disposal of the vehicle so that (for example) the leasing company could not allow other consumers to use it.

5.22 Transport for West Midlands (TfWM) pointed to further ambiguities where several people shared a leased vehicle, and possibly allowed use by others not named on the leasing agreement:

This is particularly relevant with the introduction of car clubs and it is likely that these services may be used in a similar way.

Concern about the six month time-limit

5.23 Many consultees expressed concern that the six month time-limit was arbitrary. SMMT, the UK Computing Research Committee (UKCRC) and HORIBA MIRA also thought that the time-limit could be more flexible. As Tim Marlow Ltd said:

It may not be as simple as setting a boundary at a lease period of six months and six months may not actually be the best time period for the boundary...There are also potentially multiple levels of ownership/leasing possible and the important issues will be determining the obligations of the various parties in each of those scenarios.

5.24 Wayve also felt that it was too early to delineate any time frame for leasing arrangements “given the current state of maturity in the technology”.

5.25 Several respondents thought that any exception might be manipulated as a way of avoiding licensing requirements.⁴⁴ As Burgess Salmon LLP said:

Any regulatory boundary needs to be tested against likely attempts to circumvent HARPS regulatory requirements.... The application of a hard time boundary will inevitably lead to some contracts specifying initial exclusive use periods of 6 months and 1 day.

⁴⁴ See, for example, responses from Aviva and Mobility and Access Committee for Scotland.

5.26 ABI and Thatcham said in a joint response that six months was too long:

A time constraint is welcome although the six-month limit... seems long. Hire or reward generally refers to short-term arrangements or medium-distance journeys.

5.27 The Law Society of Scotland suggested a three-month time-limit, drawing parallels to the Consumer Credit Act 1974:

Under the Consumer Credit Act three months is the time period which takes something into/out of being a lease. This would avoid, for example a two week holiday hire as six months appears to be quite a long period of time to hire a car.

5.28 By contrast, BIBA thought that a year would be more appropriate:

There isn't a logical reason to use six months as the threshold.... We would also like to ensure that this period runs in parallel with any policy wording for insurance as most insurances policies span one calendar year.

5.29 Pinsent Masons LLP thought that repeat short-term renewals should be treated in the same way as private ownership:

If a customer rents the same/similar vehicles for short-term periods (of less than six months) continuously for a total period of over 12 months, the customer should assume some of the responsibilities in relation to the HARPS. We consider that not having such an exception could lead to situations where customers abuse the regulatory regime.

5.30 Both Reed Mobility and Horwich Farrelly emphasised that the implications of entering into a six-month lease must be clearly pointed out to consumers.

Private ownership should be discouraged

5.31 Some respondents disagreed with the proposal on the basis that the regulatory system should discourage private car ownership. Hackney Living Streets and London Living Streets said:

AVs should contribute to wider transport goals of promoting sustainable, active and efficient travel, and not entrench existing failing systems of private car use.

5.32 As far as disabled people were concerned, Hackney Living Streets and London Living Streets commented that "the system should allow them access to a suitable shared transport service such as HARPS".

5.33 TfWM also emphasised the importance of shared services:

As a climate emergency has been declared on a local and national level, it is imperative that we move towards greater vehicle capacity and efficiency, along with an emphasis on sharing in order to decrease the impact of transport on the environment.

5.34 Transport Canada (TC) expressed concern:

with the possibility for vehicles to be supervised and updated by individuals. Over the air updates are being implemented by a growing number of manufacturers. TC recognizes that automated vehicles will likely be required to have over-the-air updates rather than specialist intervention, due to the need to keep current with rules of the road. As these updates are deployed, it will be important to ensure they are completed safely and in full while the vehicle is not in use and that cyber security threats are appropriately managed.

5.35 P.Whitfield Consulting Ltd queried whether private individuals could ensure the safe operation of passenger-only vehicles.

HARPS operator licensing should apply to all passenger-only vehicles

5.36 Some respondents argued that all passenger-only vehicles should be operated by a licensed operator, removing the need for a complicated boundary.

5.37 Stagecoach Group plc opposed the idea of an exception as it “may place safety and quality standards at risk”. Stevenage Borough Council also doubted whether an exception should be provided for safety reasons, reasoning that private individuals may struggle to ensure that the vehicle operates safely. Transform Scotland commented:

We are concerned at and confused by any suggestion that a vehicle could be operated without a user-in-charge by a non-HARPS licence holder.

5.38 HORIBA MIRA thought that at first the technology would require skill to operate. It would be safer to require a professional operator until it was clear that this was not needed:

It may be expected that early implementations of the technology require more skill to operate, with it then becoming progressively more user-friendly (in line with the evolution of other new technologies such as the computer or the motor car). The safer option would be to limit operational and maintenance responsibilities to a professional operator until it becomes clear that it is reasonable to provide the option of transferring this responsibility to a private individual; this point may be reached before deployment based on information from trials, or after.

5.39 This echoes two responses made in response to Question 3, arguing that HARPS operator licences should not be confined to businesses which carry passengers for hire or reward. As Heather Bradshaw-Martin (Humanity in Motion Ltd and Perkins Engines Company Ltd) said:

There should be a similar level of supervision for ANY vehicle travelling on the public road without a user in charge - whatever its size, ownership structure or purpose. Whether it is there earning money, taking part in a peer to peer scheme or on the private matters of a single owner there needs to be supervision, control and a similar level of recourse for any member of the public encountering the vehicle.

5.40 Five also thought that HARPS operator licensing should apply equally to commercial services and private ownership:

We suggest that any highly automated vehicle should be ‘operated’ by someone with an operator licence which for a highly automated vehicle owned for individual use might be a third-party company.

5.41 Five went on to explain that:

Every autonomous vehicle should require a clearly identifiable company or person with operational responsibility for matters such as moving the vehicle from the roadside after it has achieved a minimal risk condition.

5.42 ITS United Kingdom (ITS UK) suggested that the lessee could obtain a “HARPSminus” licence:

Individual ownership (whether leasing or buying) should not be on a “casual” basis as with existing cars. It should be more like owning an aircraft where the owner effectively becomes responsible for HARPS operations. This responsibility can be discharged either by contracting with a third party HARPS licence holder or by obtaining a “HARPSminus” (in this concept the “HARPSminus” which requires everything of a HARPS licence holder but does not permit using the vehicle for hire or reward).

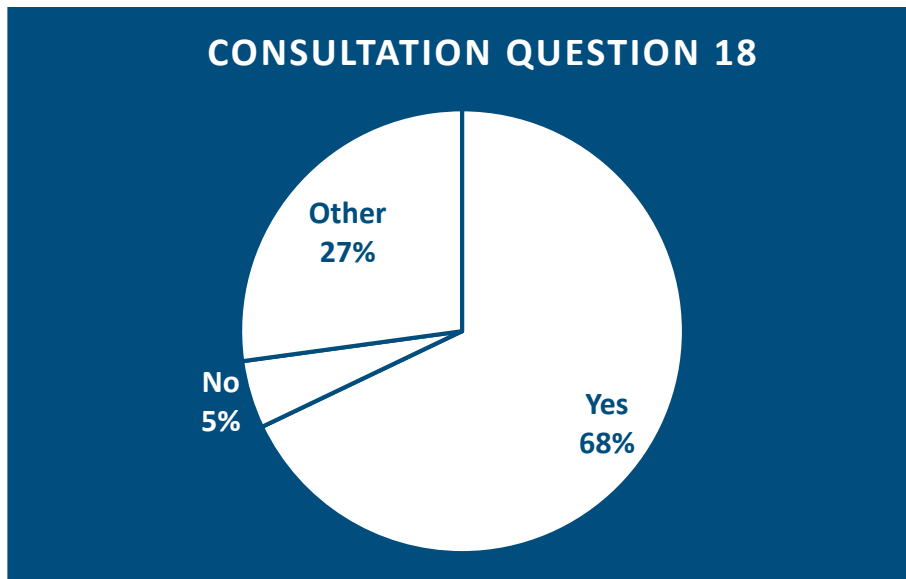
5.43 The British Parking Association (BPA) also objected to the proposed exception to the HARPS operator licencing requirement.

PLACING RESPONSIBILITIES ON THE KEEPER

Q18: Do you agree that where a passenger-only vehicle is not operated as a HARPS, the person who keeps the vehicle should be responsible for:

- (1) insuring the vehicle;**
- (2) keeping the vehicle roadworthy;**
- (3) installing safety-critical updates;**
- (4) reporting accidents; and**
- (5) removing the vehicle if it causes an obstruction or is left in a prohibited place?**

5.44 In the Consultation Paper we explained that our aim was to provide clarity about who would be legally responsible for privately-owned vehicles operated without a user-in-charge. We provisionally proposed that the duties should fall on the person who keeps the vehicle, with a rebuttable presumption that this is the registered keeper.



5.45 Out of the 80 respondents who engaged with this question, two-thirds (55 or 68%) agreed. Only four (5%) disagreed and 22 (27%) made other comments.

Agreement

5.46 Most respondents agreed that it made sense for the five obligations we had listed to fall on the registered keeper. This was described as “sensible” (Association of Local Bus Managers (ALBUM)), “logical” (Amey Consulting) and “common sense” (Pinsent Masons LLP). The Senators of the College of Justice (the Scottish Court of Session judges) said:

We agree that clarity on who is legally responsible for a privately owned vehicle authorised for use without a user-in-charge is desirable.

5.47 Barristers associated with Temple Garden Chambers in a personal joint response suggested that placing a duty on the registered keeper would be beneficial by giving victims of accidents, resulting from a failure to install safety-critical updates, an avenue to compensation.

The ability to contract out of duties

5.48 Some respondents emphasised that the registered keepers of privately-owned passenger-only vehicles should be able to contract out some or all of the five responsibilities.⁴⁵ For example, XPI Simulation Ltd said it should be possible to transfer the obligation to ensure roadworthiness to an approved third party:

It should be possible, whilst not removing the requirement for owner responsibility to use some of the services available to HARPS operators, such as use of a transport manager, to take on some of the responsibility for autonomous vehicle management, such as removing the vehicle if it causes an obstruction or is left in a prohibited place, should this be too onerous on the registered keeper. For example when considering

⁴⁵ This included Bosch, the Smart Mobility Unit, University of Hertfordshire, Reed Mobility, Burges Salmon LLP, XPI Simulation Ltd, Richard Sarginson and Bryan Reimer (MIT).

access to the technology by disabled users, who may otherwise not be capable of carrying out this function.

- 5.49 Heather Bradshaw-Martin (Humanity in Motion Ltd and Perkins Engines Company Ltd) said that the ability to contract-out responsibilities would be particularly important to some people with disabilities:

People with disabilities may have varying abilities to perform these tasks but if they are to have equal access to the independence provided by on demand travel from one's own home they will need a way of ensuring daily safety checks and vehicle removal are done, and they may also require assistance with accident reporting and updates depending on how far these can be automated and simplified by the ADSEs.

The role of the manufacturer/ADSE

- 5.50 Several respondents emphasised that the manufacturer, developer or Automated Driving System Entity (ADSE) should play a significant role in ensuring that vehicles remained roadworthy and updates were installed.⁴⁶ Some respondents also felt that the reporting of accidents should be automated, rather than falling to the responsibility of the registered keeper.⁴⁷

- 5.51 For example, Tim Marlow Ltd said that:

Although the keeper may hold this responsibility under the AEV Act, in practical terms the responsibility should rest with the ADSE or could be devolved to the organisation with which a service and maintenance contract exists.

- 5.52 TfWM commented:

It is also imperative that manufacturers provide the consumer with clear unambiguous expectations and guidelines when a vehicle is purchased. It is likely that safety-critical updates will make alerts to the user necessary and the onus for these alerts should be put onto the manufacturer to ensure that safety is not undermined and people are not confused about what is expected of them.

- 5.53 Similarly, Stewarts Law LLP said:

Where the individual owner/keeper has responsibility for all of the above areas, sustained public education is essential.... It is incumbent on the developers to ensure the vehicle technology is capable of suitable alerts and notifications in relation to accident reporting or maintenance requirements in any event.

- 5.54 DAC Beachcroft LLP said that the manufacturers and the ADSE should be required to transmit safety-critical software updates wirelessly, subject to a system whereby the vehicle becomes inoperative if it is not installed by the deadline. They reasoned that:

⁴⁶ See, for example, responses from ABI and Thatcham (joint response), SMMT, Oxbotica, John Parkin (University of the West of England, Bristol), Stewarts Law LLP, TfWM, Stevenage Borough Council and the Law Society of Scotland.

⁴⁷ These included ABI and Thatcham (joint response), Stewarts Law LLP, Tim Marlow Ltd, Oxbotica, BIBA and Stevenage Borough Council.

This system has worked very well for computers and mobile telephones for years.

5.55 In a similar vein, Autonomous Intelligent Driving GmbH (AID GmbH) said:

In conventional vehicles the keeper (or user) may install the software updates (including but not limited to safety-critical ones) upon confirmation, whereby for HARPS it is questionable if the HARPS operator - or in the present question the keeper - shall have the duty to install the updates. The ADSE shall have the means to check if the installation of the updates has been performed as intended on the vehicles in operation.

Responsibilities should lie with a licenced operator, not an individual

5.56 Finally, several respondents argued that some or all of these responsibilities should lie with a HARPS operator rather than an individual consumer. Maple Consulting Ltd, for example, objected to the idea of the general public installing safety-critical updates.

5.57 SMMT, Oxbotica and Transport for London (TfL) all pointed out that some of the responsibilities (such as removing vehicles) would require remote supervision, and this would not be feasible for an individual. For example, TfL said:

this question does not address the issue of supervision of privately-owned vehicles. We are concerned that challenges such as a loss of connectivity do not only apply to HARPS. Provided that the keeper of the vehicle is likely not to have the skills and expertise to mitigate and respond safely to any connectivity or control issues, this raises the question 'who should be responsible for supervising a privately-owned passenger-only vehicle?'. We envisage that in the AVs era, there will be an ongoing customer support relationship between the owner/keeper and the vehicle/software manufacturer to ensure such issues are resolved in real time and relevant software updates are provided.

5.58 Hackney Living Streets and London Living Streets again rejected the idea that passenger-only vehicles should be owned by individuals.

Issues with the registration system

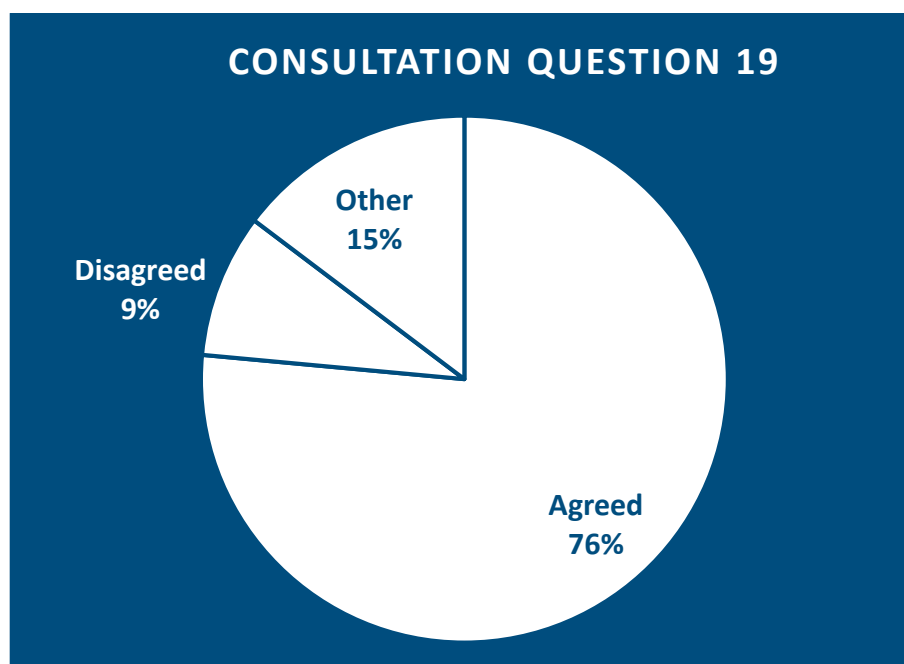
5.59 The BPA expressed concern with this proposal due to issues within the existing registration system. They said that:

The owner, versus keeper, versus operator, versus user/passenger is complex. This is due to the current registration system for keeper as there are times when there isn't a keeper for example when the vehicle is being sold by a dealer.

The BPA also would like you to consider that there is an opportunity to use the changes needed for the safe adoption of HARPS as an opportunity to address areas that could improve the vehicle registration system. The BPA would like to ask you to give consideration to whether the DVLA should have the ability to take account of trusted third-party data and have powers to enforce un-registered or incorrectly registered vehicles.

PRESUMPTION THAT THE REGISTERED KEEPER KEEPS THE VEHICLE

Q19: Do you agree that there should be a statutory presumption that the registered keeper is the person who keeps the vehicle?



5.60 Of the 68 respondents who engaged with this question, most (52 or 76%) agreed that there should be a statutory presumption that the registered keeper is the person who keeps the vehicle; six respondents (9%) disagreed and 10 (15%) answered other.

5.61 Many respondents agreed with no further elaboration, though some mentioned the need for clarity in this area. Some respondents, including the Crown Prosecution Service (CPS), emphasised the importance of the presumption being rebuttable.⁴⁸ The CPS further cautioned about the risk of confusion:

It should be borne in mind that the existing law for drivers and the different obligations imposed on registered keepers, keepers and owners will be a different regime from what is proposed here so there may be scope for confusion, but that would be for parliament to ensure clarity that this statutory presumption applies to automated vehicles only.

The registered keeper concept needs review

5.62 A few respondents thought that concept of a registered keeper was not suited to automated vehicles and should be reviewed. As the FTA said:

FTA would question the suitability of DVSA's V5 process in an era of HARPS (privately owned or otherwise) and would recommend a review of the registration on HARPS.

5.63 The UKCRC thought that the concept of a "registered keeper" was outdated:

⁴⁸ These included Horwich Farrelly, Senators of the College of Justice, Law Society of Scotland, Aviva, Pinsent Masons LLP, Kennedys Law LLP, BVRLA and ITS UK.

The notion of a register seems rooted in a previous century rather than the world of HARPS. It would seem appropriate to explore whether software could be used to rapidly update the person who keeps the vehicle, for example when a registered keeper is not able to remove the vehicle if it causes an obstruction or is left in a prohibited place.

5.64 SMMT thought that the concept was unsuited to new business models:

In the context of a vehicle subscription service, the vehicle provider (which could also be known as the lessor, or in certain cases the vehicle manufacturer) is usually the owner and registered keeper, but is certainly not the person who keeps the vehicle, who is normally the customer... Statutory regulation could be phrased in a way that is more differentiating and takes account of these different possibilities.

5.65 Mills & Reeve LLP believed that the concept of “registered keeper” would “fall away” in HARPS context.

REGISTERED KEEPERS AND LEASING CONTRACTS

Q20: We seek views on whether:

(1) a lessor should be responsible for the obligations listed in Question 18 unless they inform the lessee that the duties have been transferred.

(2) a lessor who is registered as the keeper of a passenger-only vehicle should only be able to transfer the obligations to a lessee who is not a HARPS operator if the duties are clearly explained to the lessee and the lessee signs statement accepting responsibility?

5.66 In the Consultation Paper we commented that for long leases, it is common for the leasing company to be the registered keeper, which gives the owner a degree of protection against unauthorised sale. However, this is not a universal practice.

5.67 Where a passenger-only vehicle is leased to a private individual, and the lessor is the registered keeper, the effect of our proposal would be to make the lessor legally responsible for the vehicle. We said that often that would be satisfactory, as the responsibilities would be performed by a professional organisation.

5.68 However, some leasing companies may wish to remain the registered keeper while devolving these responsibilities to the lessee. Alternatively, the lessee may wish to contract for services with another supplier. We therefore asked if there should be a procedure for transferring obligations to the lessee if they were clearly explained and the lessee signed a statement accepting responsibilities.

5.69 Most responses endorsed such a procedure. However, there were suggestions for a shared approach, whereby the various duties were treated differently. Some respondents thought that the responsibilities should not be capable of transfer, while others suggested that these obligations should always fall on the lessee.

Agreement

5.70 Many respondents who agreed with both proposals cited the need for transparency and certainty.⁴⁹

5.71 There were also comments that the statement should be clear. Richard Sarginson, for example, said that it should be a “stand alone document”:

Ideally, this needs to be a clear and separate document so that it was not agreed to by being amongst many other terms and conditions.

5.72 Thompsons Solicitors LLP agreed on condition that if the lessee failed to insure the vehicle, liability would rest with the Motor Insurers Bureau:

Provisions should be made to amend the Motor Insurance Bureau’s Uninsured Drivers Scheme to take account of cases where the adequate minimum insurance has not been obtained by the lessee.

A shared approach

5.73 One theme from the responses was that responsibilities might be shared between the lessor and lessee. As SMMT said:

These roles and responsibilities could in certain arrangements be shared, but should in any case be clearly explained in the leasing contract.

5.74 In a joint response, ABI and Thatcham said the lessee was better placed to report incidents and defects:

There may be merit in encouraging or requiring a long-term lessee who has exclusive access to the vehicle on a long-term basis to report incidents or the fact that a vehicle is no longer roadworthy should they be aware of any incidents/defects and neither the ADS nor the HARPS operator recognise this.

5.75 The British Vehicle Rental and Leasing Association thought that lessees were less well placed to update software:

This raises a question about whether it is appropriate for everything to be left to the lessee. For example, how would critical updates be communicated and where does the responsibility lie to ensure these are acted on?

5.76 BIBA said that responsibility for obtaining insurance should instead fall on the lessee to ensure a competitive market.

Disagreement: lessees lack expertise

5.77 Many respondents disagreed with the proposal on the grounds that the lessee would lack sufficient expertise to fulfil the responsibilities. AXA pointed to “asymmetrical information” between a leasing company and lessee, which would create a power imbalance that requires such transfers to be prohibited in the “formative years” of

⁴⁹ These included SMMT, TfWM, Bosch, Reed Mobility, Smart Mobility Unit (University of Hertfordshire), Richard Sarginson, the Senators of the College of Justice, Police Scotland, Goggo Network and Aviva.

automated vehicles. Similar concerns were also expressed by the Institute and Faculty of Actuaries, particularly in respect of safety-critical updates and removing stopped vehicles.⁵⁰

- 5.78 Transform Scotland questioned the purpose of a licensing system “if a signed statement of acceptance of responsibility is sufficient to by-pass it”. Similarly, ITS UK stated:

The obligations will be onerous and only very few individuals will have the capabilities. The lessee has to discharge the responsibilities of the “HARPSminus” licence. This responsibility can be discharged either by contracting with a third party HARPS licence holder or by obtaining a “HARPSminus” licence themselves (in this concept the “HARPSminus” which requires everything of a HARPS licence holder but does not permit using the vehicle for hire or reward).

- 5.79 The Faculty of Advocates said that the lessor should only transfer the obligations to a lessee of similar financial and technical standing as “to allow otherwise could put the public at risk and allow the lessor to avoid legal responsibility”.
- 5.80 Hackney Living Streets and London Living Streets both strongly objected as “there are significant get-out clauses here for both the lessee (they could claim duties weren't clearly explained) and lessor (claiming lessee signed statement accepting responsibility)”.

Disagreement: duties should fall on the lessee automatically

- 5.81 By contrast, a few respondents thought that the duties should fall on the lessee automatically, whenever the lease was for more than six months. As the CPS put it:

If a lease is to be for over 6 months then perhaps the responsibilities should automatically fall to the lessee who as the keeper and user of the vehicle will be better placed to fulfil the obligations listed in question 18. We do not consider that it should be necessary for the lessee to sign a specific statement accepting responsibility.

A POWER TO REQUIRE KEEPERS TO CONTRACT FOR SERVICES

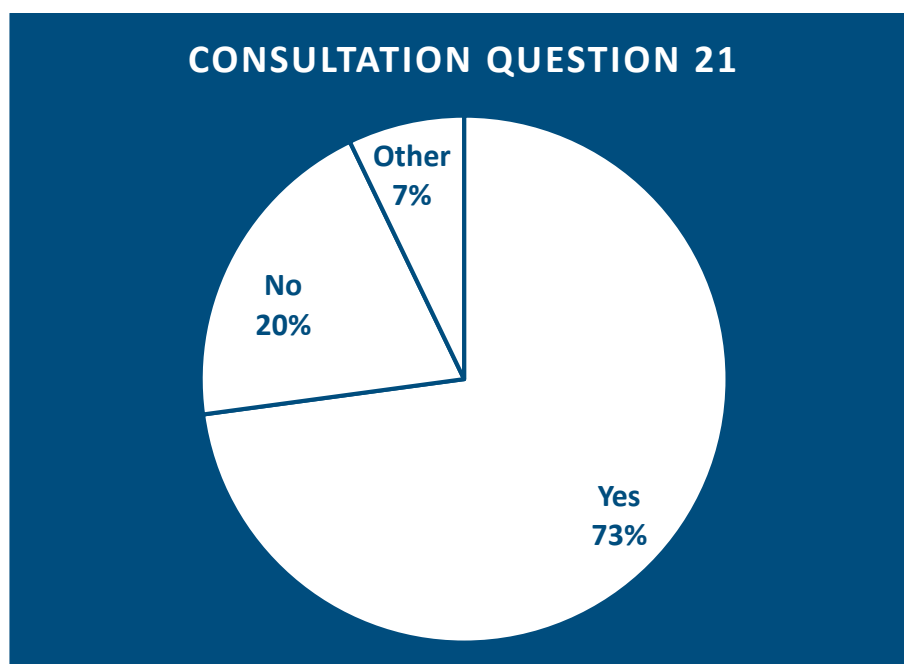
Q21: Do you agree that for passenger-only vehicles which are not operated as HARPS the legislation should include a regulation-making power to require registered keepers to have in place a contract for supervision and maintenance services with a licensed provider?

- 5.82 In the Consultation Paper, we expressed the view that passenger-only vehicles would require supervision. This would be an onerous responsibility. If an empty vehicle encountered a problem and requested intervention, individuals would have difficulty responding quickly enough alongside work and family. Similarly, individuals might find it difficult to keep up with the technical challenges in updating vehicles and guarding against cyber-attacks.

- 5.83 We provisionally proposed a regulation-making power to apply to passenger-only vehicles which were not operated by a HARPS licence holder. This could be used to require registered keepers to contract with a licensed provider for supervision and

⁵⁰ See also responses from Gemserv Limited, Maple Consulting Ltd, BLM LLP and BIBA.

maintenance services. We explained that a licensed provider would either be a HARPS operator or would be subject to similar licensing requirements in organising maintenance and supervision.



5.84 Out of the 70 respondents who answered this question, a substantial majority (51, or 73%) said “yes”; 14 (20%) said “other” and five (7%) said “no”.

Agreement

5.85 This question proved relatively uncontroversial. Many respondents simply agreed outright with this proposition, with no further elaboration. Others emphasised that supervision and maintenance will require specialist knowledge that private individuals are unlikely to have. ALBUM, BIBA, and Amey Consulting said that this power would be needed for public acceptance of HARPS.

5.86 The Faculty of Advocates and ALBUM both emphasised the need for an effective enforcement mechanism to support such a requirement.

Exceptions

5.87 Some respondents suggested exceptions. The UKCRC proposed an exception for “research organisations and for individuals who can demonstrate appropriate competence in the supervision and maintenance of these vehicles”. Five suggested an exception for vehicles not in day-to-day use, similar to the statutory off-road notification.

5.88 A few respondents saw a need for an exception where the registered keeper was suitably qualified. For example, XPI Simulation Ltd said that the regulation should allow for “suitably qualified keepers to conduct this themselves”.

5.89 Oxbotica thought that there should “be provision to allow flexibility”:

In some cases the registered keeper might be the sole user of the vehicle and would prefer to retain the supervision of the vehicle. It should also be considered that some

keepers might prefer to contract reduced supervision services to cover only for specific circumstances, short periods of time or even specific journeys.

Disagreement

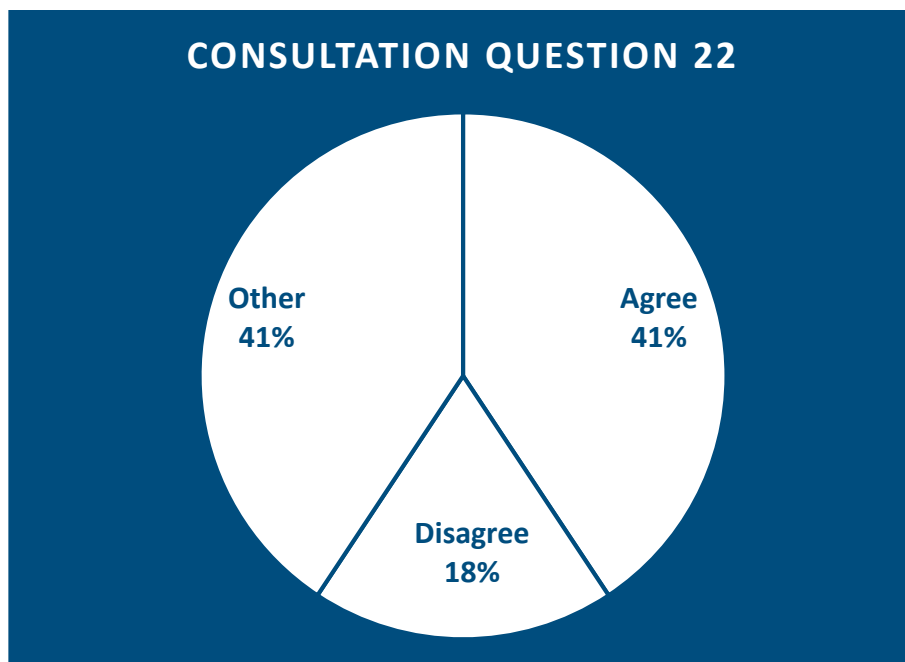
5.90 A few respondents thought that regulation was unnecessary. KPMG LLP said that most people would take out contracts voluntarily, when faced with the high costs of having their vehicles removed by emergency services:

Provisions should be in place in regulation to enable emergency services or authorised third parties to take remote control of a vehicle - with the operator's permission - in order to move it. If an operator is charged by the recovering party for moving the vehicle this will likely incentivise operators to take out supervision contracts.

5.91 SMMT said that this requirement may not need to be entrenched in legislation as supervision and maintenance services are likely to be obtained regardless.

PEER-TO-PEER LENDING

Q22: We welcome views on whether peer-to-peer lending and group arrangements relating to passenger-only vehicles might create any loopholes in our proposed system of regulation.



5.92 In all 59 respondents addressed this question, of whom 24 (41%) thought that these arrangements would give rise to loopholes; 24 (41%) answered "other"; and 11 (18%) said "no".

Peer-to-peer lending and the definition of "hire and reward"

5.93 The previous chapter discusses the difficult boundary between "carrying passengers for hire or reward" and "mere social kindness". Several respondents said that this boundary would be particularly difficult to apply to peer-to-peer lending.

- 5.94 As Heather Bradshaw-Martin (Humanity in Motion Ltd and Perkins Engines Company Ltd) explained, these services often go beyond mere social kindness:

But these are not really "businesses" and the term "business" also appears in the regulations. They are not even "side hustles" for many people.

- 5.95 In a similar vein, BIBA said:

The words "Mere social kindness" perhaps needs some definition if not to be exploited as a possible loophole. Making the group the registered keeper may bring the same problem flagged in 5.45 if the group is composed of 'lay' individuals who could find it difficult to keep abreast of the technical challenges in updating vehicles and guarding against cyber-attacks.

- 5.96 The Bar Council drew an analogy with P2P lending:

In the regulated lending sector it is the P2P lending platform which is subject to Financial Conduct Authority regulation, but the actual lending takes place between individuals who are (provided they are not acting by way of business) not themselves subject to regulation. That model does not fit entirely comfortably with the existing legislation (the CCA), which places certain obligations on the creditor.

- 5.97 The Bar Council also noted the intention expressed in the Consultation Paper that P2P lending would require a HARPS licence, commenting:

We are not entirely comfortable with the proposition that the relevant definition ("carriage of passengers for hire or reward") would be met in these circumstances. If the regulated lending example is applied by analogy, it would be the users of the platform who would be offering vehicles for hire or reward, not the platform itself. It may therefore be necessary to provide specifically for the regulation of such platforms as HARPS.

- 5.98 AXA urged us to consider the "situation in which an entity, such as a car-club, could borrow a vehicle through a P2P lending scheme and subsequently use it as a HARPS". They thought that this:

could result in inconsistencies in safety standards and consumer confusion regarding their responsibilities when using automated vehicles.

- 5.99 The BPA felt that the regulation would need to be clear to ensure that P2P lending did not create loopholes:

Yes, this is possible so need to make sure that wording is clear. As we are moving into a world where people can rent their drives, cars and homes with considerably less regulations... we think it would be worth considering that this will also happen with privately owned HARPS.

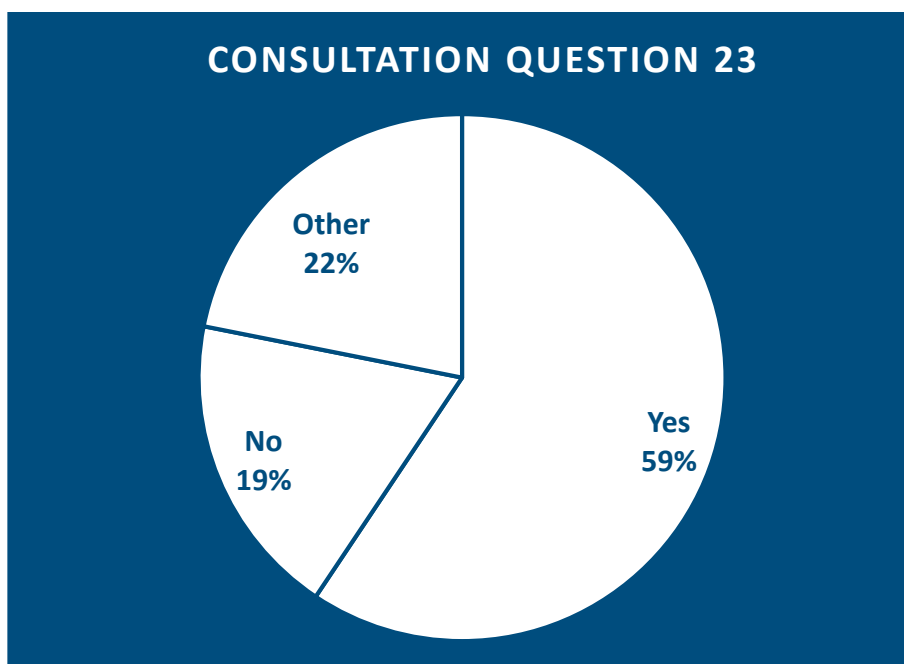
Loopholes are not a problem

- 5.100 Some respondents said that P2P lending and group arrangements will not give rise to loopholes providing that there is a requirement for the registered keeper to obtain a contract for maintenance and supervision with a licensed provider.

5.101 Others thought that any risks could be mitigated by further guidance and regulation.⁵¹
The Suzy Lamplugh Trust recommended an expert steering group to consider the issue.

PROTECTING CONSUMERS FROM HIGH ONGOING COSTS

Q23: We seek views on whether the safety assurance agency proposed in Consultation Paper 1 should be under a duty to ensure that consumers are given the information they need to take informed decisions about the ongoing costs of owning automated vehicles.



5.102 In the Consultation Paper we noted that consumers who pay a significant purchase price for an automated vehicle may be faced with considerable ongoing updating and maintenance costs. At least initially, these may be difficult to anticipate. Furthermore, concerns about safety, cyber-security and the protection of intellectual property may reduce access to independent aftermarket providers. The costs of updates, repairs and spare parts may not be subject to competitive pressure.

5.103 We asked if the safety assurance agency should ensure that consumers are given information about these costs before they buy an automated vehicle.

5.104 Of the 63 people who engaged with this question, a majority (38 or 59%) agreed; 14 (22%) said "other" and 12 (19%) said no. Of those answered who "other" or "no", almost all agreed that information was needed but questioned whether a duty should be placed on the safety assurance agency.

⁵¹ See responses from Horwich Farrelly, Richard Sarginson, SMMT, ABI and Thatcham (joint response).

The need for information

5.105 Many respondents thought that information about ongoing costs was essential to consumer protection. As Aviva said:

We believe it is essential that consumers have the right information and insights to help them make informed decisions about the cost of ownership including the frequency of these ongoing costs which could include maintenance and manufacturers data updates. Any manufacturer updates that relate to the safety of either passengers or other road users should be automatic without any charge.

5.106 Oxbotica agreed that each manufacturer “will adopt proprietary solutions for hardware and software and that this will create some level of ‘lock in’ for customers”:

Therefore, consumers should be made aware that there is a degree of technology lock-in that will restrict their choice of replacement parts and repair vendors.

5.107 Oxbotica agreed that customers should be informed about the ongoing costs of owning automated vehicles, as “constant software updates, maintenance and operational supervision will be crucial for safety”.

5.108 Similarly, Pinsent Masons LLP thought that such a duty should exist to “ensure that consumers are not taken advantage of”:

This is a particular concern as not all consumers will have an understanding of how HARPS work, and how cumbersome or costly on-going obligations can be.... This could potentially be relevant when consumers are sold vehicles with a free period of subscription which becomes 'paid for' after a period of time.

Not a safety agency responsibility

5.109 Of those that disagreed, most said that information was needed but questioned whether this was the safety assurance agency’s responsibility. SMMT put this point forcefully:

Centralising both the pre-deployment approval and post-deployment regulation of consumer affairs and market surveillance under one unitary authority creates confusion and blurs the focus of this agency. These responsibilities can be adequately performed by existing agencies, namely the Advertising Standards Authority in respect of regulating consumer and marketing materials and the Competition and Markets Authority in respect of market surveillance.

5.110 SMMT expected the market to provide information:

There will be no shortage of consumer organisations and automotive/transport/mobility publications providing consumers with information about the ongoing costs of owning automated vehicles or using HARPS, just as there are today on the running costs of passenger cars of various propulsion options.

5.111 Transport Canada shared a similar view expressed by the Canadian Vehicle Manufacturers Association:

As for vehicles currently on the road today, the marketplace ensures that manufacturers are competitive and we caution against regulating information about ongoing costs.

- 5.112 The Bar Council also suggested that this duty could instead fall on Trading Standards or the Advertising Standards Agency. Reed Mobility suggested the Driver and Vehicle Standards Agency.
- 5.113 ITS UK disagreed on the basis that the principle of “caveat emptor” (meaning “buyer beware”) should apply. Mills & Reeve LLP agreed that consumers should be provided with information regarding ongoing costs, but said that private ownership should not receive “undue emphasis” given that it is not likely to be a common occurrence.

THE WAY FORWARD

- 5.114 We note consultees’ concerns about the complexity of our proposals. There were many uncertainties regarding key boundaries, including the boundary between private services and those operating for “hire or reward”; and between short-term rentals and leasing arrangements. Another layer of difficulty is added by the current practice by which many leasing companies appear in the register as the keeper, even though the vehicle is actually kept by the lessee.
- 5.115 In Consultation Paper 3 we will consider whether it is possible to achieve similar outcomes in a more streamlined way.
- 5.116 Where passenger-only vehicles are privately-owned (in the sense used in Chapter 5 of the Consultation Paper), someone will need to be responsible for insurance, maintenance, software updates, cyber-security and supervision. Many consultees agreed that, at least initially, some of these responsibilities will be onerous. Private individuals will need to contract with third parties to ensure, for example, that software is updated and vehicles are supervised.
- 5.117 In Consultation Paper 2 we provisionally proposed that responsibilities should lie with the person who keeps the vehicle, subject to a regulation-making power to require the keeper to contract with a licensed provider. One way to simplify our proposals could be to switch the starting point and the regulation-making power. In other words, the starting point would be that all “passenger-only” vehicles used without a user-in-charge must be operated by a licensed provider (who would either be a HARPS operator or subject to similar requirements). This would then be subject to a regulation-making power, allowing keepers to use vehicles for private purposes without a licensed provider as and when it becomes safe to do so.
- 5.118 On this basis, initially, all vehicles would be covered by the core safety requirements of the HARPS operator licensing scheme. However, some provisions of HARPS operator licensing (such as price information) would only apply to those services which carried passengers as a commercial service. As we get more experience of the passenger-only vehicles, licensed providers could agree that keepers would undertake some responsibilities (such as insurance). Then, as maintenance and software updates become easier and more automated, keepers would be able to take over progressively more duties. We will consider this further in Consultation Paper 3.

5.119 This highlights the difference between two broad categories of duties which HARPS operators must fulfil: the duties of transport operators on the one hand; and those duties which are also associated with drivers, such as insurance, maintenance, software updates and supervision, on the other. Whereas entities offering transport services to the public would need to comply with both sets of obligations, “HARPS-minus” would only need to satisfy the obligations supporting the safe driving of passenger only vehicles.

Chapter 6: Accessibility

OVERVIEW

- 6.1 Engagement with Chapter 6 was very high and extremely positive. Numerous respondents commended our focus on accessibility and emphasised the potential benefits of Highly Automated Road Passenger Services (HARPS) in this respect. The importance of accessibility was not disputed by any of the respondents.
- 6.2 The concepts of co-design (a design method where older and disabled people work with designers, operators and regulators to ensure vehicles and services are accessible from the outset) and the “whole journey” approach (considering a trip from the moment of booking to the destination) attracted overwhelming support. Another recurring theme throughout answers was the need to avoid a “one-size-fits-all” approach that stifles innovation.
- 6.3 In the Consultation Paper we also proposed an outcome-based approach to regulation. This approach sets out 12 accessibility outcomes a HARPS could be measured against, but avoids prescribing how they should be achieved. Only favourable views were expressed by responses that mentioned this approach.
- 6.4 Every question attracted practical suggestions as to what features and services would maximise the accessibility of HARPS. Several responses emphasised that people with particular accessibility needs should not have to pay more for accessible services.
- 6.5 There were no objections to extending the duty on service providers not to discriminate and to make reasonable adjustments under section 29 of the Equality Act 2010 (EA 2010) to HARPS operators: 83% of respondents to the question answered in favour. Of those that answered “other”, most mentioned the need to avoid stifling innovation.
- 6.6 Strong majorities also supported provisions being made for ensuring passengers can board and alight vehicles, requiring reassurance and accessible information upon disruption and expanding support at designated points of departure and arrival. However, several respondents saw this as a matter of vehicle and infrastructure design, rather than the service provided. This was a recurring theme throughout Chapter 6.
- 6.7 There was overwhelming support for the development of minimum standards of accessibility, balanced against the need to promote innovation.
- 6.8 The most divisive question proved to be whether HARPS operators should be required to record data on usage by older and disabled people. Although a majority agreed that they should, many respondents drew attention to the need to ensure that data protection laws are complied with and privacy is respected.
- 6.9 Case studies involving members of Disability Equality Scotland, Anxiety UK and Guide Dogs UK provided further insight into the accessibility needs of people with disabilities.

WHAT WE WANT TO ACHIEVE

Q24: We seek views on how regulation can best promote the accessibility of Highly Automated Road Passenger Services (HARPS)? In particular, we seek views on the key benefits and concerns that regulation should address.

Potential benefits of HARPS

6.10 Out of the 71 answers to this question, numerous respondents emphasised the importance of accessible transport. For example, the Bar Council said:

As the Law Commission are doubtless aware, transport is key to the independence of people with disabilities and underpins many of the rights set out in the Equality Act 2010.

*As stated by Lady Hale in *Paulley v First Group Plc* [2017] UKSC 4 “The ability to travel and to get about is important to all of us. Without it we cannot get to work, do the shopping, visit family and friends or places of entertainment, in short be part of the community.... Difficulties with transport are one of the two most common barriers to work for people with impairments ... It scarcely needs stating that they face particular difficulties in getting about and thus playing as full a part as they can in the life of the community. Without the ability to travel they risk becoming socially isolated and losing confidence in themselves. But their journeys need even greater planning than do those of people who are not wheelchair users: will I be able to get to the bus stop, will I be able to get on the bus, when will the bus go, will I be able to get from the bus to the train station, will I be able to get on the train, when will the train go, will I be able to get to my destination at the other end”.*

6.11 Many respondents then went on to discuss the potential benefits of HARPS in this respect:

The introduction of HARPS offers the unique opportunity to shape future road passenger transport services in a way that they are fully accessible and inclusive. It is vital that the use of a strong evidence base on diversity and inclusion is mandated to inform decision making related to any future services. It is also important that adequate consultation and engagement with minority groups is ensured and that an efficient mechanism is in place to ensure ongoing monitoring of real impacts of HARPS on such groups. [Transport for London (TfL)]

Public transport is an important facility to ensure that all members of society have access to opportunity, either for work or leisure. The PSV industry has invested heavily in accessible transport and it is the view of traffic commissioners’ that accessibility requirements should be the same regardless of whether the vehicle is conventional or an automated. This position reflects the diverse need of society. [Traffic Commissioners]

We believe that this developing technology has the potential to revolutionise the lives of disabled people by making transport services much easier to use. It offers particular benefits for those who currently cannot use a conventional private motor car. For those people who cannot drive a car for disability reasons these services offer the potential for a greatly increased level of personal independence. At the same time the design opportunities arising for smaller vehicles which do not require space to be set

aside for a driver may also increase the options available to those disabled people who have to travel in large wheelchairs. The potential for increased and more flexible door-to-door options can benefit anyone with some form of mobility impairment, including those with cognitive impairments who may struggle in unfamiliar environments. For other disabled persons the ability to use shared autonomous public vehicles will be very attractive and make transport more inclusive. [Disabled Persons Transport Advisory Committee (DPTAC)]

Accessibility is of major importance and is one of the potential key benefits of HARPS. An SMMT-commissioned report in 2017 found that automated vehicles have the potential to reduce social exclusion significantly. Almost half of all people with mobility-related disabilities in the study said automated vehicles would allow them to pursue hobbies outside of home, while two-fifths said they would benefit from having better access to healthcare. 47% of older people surveyed said automated vehicles would make it easier for them to fulfil basic day-to-day tasks such as grocery shopping. [Society of Motor Manufacturers and Traders (SMMT)]

Transport Canada agrees that people with disabilities would benefit from ride-sharing services. The introduction of Level 4 automated vehicles may also give people with disabilities as well as the elderly the ability to travel without the need for a driver's license. [Transport Canada]

HARPS is uniquely positioned be able to improve accessibility in both of these ways and reap many of the potential benefits of improved accessibility. These benefits are not limited to just improved lives of disabled riders, but also include greater impacts on things like non-disabled riders, transport operators, and the economy. [KPMG LLP]

- 6.12 Respondents felt that regulation has a key role to play in ensuring these benefits are realised. The Mobility and Access Committee for Scotland (MACS) said:

Any regulation that is designed to promote accessibility of highly automated road passenger services must be inclusive across all disabilities so that services are available to everyone and that no one is left behind.

- 6.13 Sustrans said that anything that limits accessibility “should be regulated out of the service”, including anything relating to “the physical design of vehicle, the operational parameters that are set, the ways that algorithmic programming is used to set priorities and preferences, and the extent of assumptions about sensory or educational abilities”.

- 6.14 Uber felt that the regulatory framework should promote accessibility across the entire transport network, rather than focussing solely on HARPS:

Uber recognises the imperative to improve transportation access for a variety of communities, with particular recognised needs for certain elderly members of the community, certain persons with disabilities, and those who live in areas without access to reliable transportation. AVs and HARPS can contribute to meaningful improvements in transportation access. But because AVs and HARPS plainly represent part of a solution, a regulatory framework should not look to solve transportation access via rules that exclusively impact AVs. Communities seeking improved transportation access benefit from improved accessible transportation

options of all types, whether involving conventional vehicles, AVs, or otherwise. Any policy offering in this area should proceed accordingly.

The need for flexibility

- 6.15 While every respondent to this question recognised the importance of accessibility, many warned against a “one-size-fits-all” approach:

Regulation should not impose inappropriate technical and operational requirements that could hinder the introduction of HARPS. For example, instead of requiring all HARPS to have staff on board with non-driving responsibilities to focus on providing customer care, regulation should be flexible enough to account for the deployment of a mixed fleet where some vehicles will have staff on board to cater for special customer access needs. HARPS offerings could be personalised – a special disability access option could be available on the vehicle configurator app at the ordering stage. Regulation, where necessary, could focus on improving accessibility for the most relevant HARPS use cases (e.g. access to healthcare, workplace, transport hubs) and making these operationally attractive for HARPS operators to address. [SMMT]

If it is mandated that all HARPS vehicles have a human “assistant” to cope with the occasional disabled person, any cost savings will be lost and HARPS becomes completely pointless. [Richard Morris (Innovate UK)]

- 6.16 Autonomous Intelligent Driving GmbH (AID GmbH) also warned against rigid regulation:

As the HARPS technology is ever evolving, stiff regulation shall be avoided as it would stifle innovation and hinder possible optimal solutions for HARPS. Instead, high-level requirements that regulate outcomes in terms of safety shall be mandated as opposed to heavily regulating single aspects of the technology (e. g. what sensors shall be equipped on the vehicle, etc.). In order to best promote the accessibility of HARPS guidelines/code of practice can provide a nimble tool (instead of regulations) to suggest best practices that the Government would like to see followed. While regulations – especially in the range of HARPS complexity – require longer times to alter, guidelines can be adapted faster and would especially in the initiation phase of HARPS potentially render higher benefits than regulating overall aspects of the technology and its use.

- 6.17 Transport for West Midlands (TfWM) and the Independent Disability Advisory Groups (IDAG) also expressed a similar view. Bryan Reimer (MIT) suggested that the requirements imposed could increase over time to avoid inhibiting initial market entry, and TfL said it is “important that any new set of accessibility rules will be flexible and updated in the light of increasing experience”.

- 6.18 Numerous respondents felt that a mixed fleet approach could ensure an appropriate balance between accessibility and innovation. P. Whitfield Consulting Ltd said:

Operators should be asked to conform to vehicle design and operations guidance that will need to be developed under the tests of reasonableness. A key issue is whether every vehicle should be compliant with a single set of rules, or whether a dual approach can be taken so that sufficient enabled vehicles are available alongside non-adapted vehicles. The proportion of each type of vehicle could be set out based on

population data so that no user group is directly disadvantaged in terms of either price or vehicle availability.

- 6.19 SMMT, the Faculty of Advocates, DAC Beachcroft LLP and the Aviva Future Mobility Legal Group also highlighted the importance of mixed fleets.

Concerns to be addressed

- 6.20 One theme that emerged was the need to ensure that regulation does not overlook hidden disabilities:

Much of the focus of transport policy on disability has traditionally focused on physical mobility and particularly in relation to access of wheelchair or mobility scooters. Fortunately, this trend has been recently changing with increasing consideration being given to the barriers faced by people with mental impairments, including hidden psychological conditions. [TfL]

Historically, the term 'wheelchair accessible' is used when talking about accessibility. The landscape has moved forward in recognising different types of disabilities and the regulations need to reflect this. Cognitive disabilities, mental health conditions and hidden disabilities are much more prominent in today's society and regulation needs to cater for a much wider range of people with different conditions. Operators of HARPS need to be required to address the needs of people with diverse disabilities and provide 'reasonable adjustments' to help these people. DMUK does appreciate that this could be a mammoth task for an operator and it is impossible to address the needs of absolutely everybody as disabilities will affect people in unique ways, but emphasis needs to be placed on not just being 'wheelchair accessible'. [Disabled Motoring UK]

- 6.21 Other responses⁵² pointed out that identifying accessibility needs and risks will require extensive research and engagement with disabled and elderly people. In this respect, IDAG suggested:

a comprehensive register of road traffic risks to all users and pedestrians, irrespective of their physical and cognitive characteristics, such as those defined by ethnicity, age, or gender. This includes the ability of AVs to detect items such as prams, wheelchairs, white canes, and other mobility aids.

- 6.22 The Scottish Trades Union Congress expressed their concern that older people may be excluded from the use and benefits of HARPS, highlighting digital exclusion in other contexts:

Evidence from other waves of automation, for example the expansion of online banking and the roll out of Universal Credit, suggests that older people and disabled people are often further disadvantaged by such changes.

- 6.23 Disabled Motoring UK highlighted that, even when regulations are in place requiring that existing forms of passenger transport are accessible, they are under-enforced:

⁵² ALBUM, Heather Bradshaw-Martin (Humanity in Motion), IDAG and Richard Morris (Innovate UK).

Most modes of passenger service are physically accessible to many disabled people and these regulations should definitely extend to HARPS. The problems that often occur are due to priorities for disabled people not being enforced. For example, buses usually provide a designated wheelchair space on board, but there have been many incidents when the driver has not asked a non-wheelchair user to vacate this space meaning that the disabled person cannot travel. We like to see regulations do more to address these types of issues. It's not enough for HARPS to be physically accessible they need to be required to enforce rules. This could be problematic in the absence of a 'driver'.

- 6.24 Several responses highlighted the role of, and challenges of replacing, human assistance. The Community Transport Association said:

We would continue to press for a passenger assistant to be on board the vehicle both to assist and provide reassurance to vulnerable passengers affected by health and mobility challenges and to ensure that reducing loneliness and isolation continues to be a key benefit of shared transport.

Health transport is also a key service offered by community transport operators. Should this be an element of HARPS provision, passengers aboard the vehicle could have health issues that require general or specialised supervision. As such, we would recommend that HARPS operators have policies in place necessitating on-board staff for passengers with a certain level of health/mobility risk and procedures in place in case of emergencies.

- 6.25 On a similar note, Uber said:

... serving people with certain disabilities, particularly those who use electric wheelchairs and have ambulatory disabilities, with fully driverless vehicles will require significant product innovation to replace assistance currently provided by a human driver or operator, including, onboarding, offboarding, and securing restraints.

As a result, instead of focusing exclusively on AV accessibility, Uber has focused on accessibility across our current suite of products, including through "Uber Access," which connects riders via the Uber app to WAVs, and is helping to provide lessons on how best to provide and scale accessible transportation options -- lessons that will also assist in supporting self-driving vehicle fleet selection and product development.

- 6.26 IDAG also emphasised that accessible HARPS would be contingent on diverse testing groups:

Primarily in the research and development of AVs, IDAG encourages the involvement of diverse testing groups, including the comprehensive and ethical testing of the impacts of AVs on minority groups, including those with a broad range of disabilities. Moreover, such testing must not only consider the safety risks of AVs on these populations, but must also review and improve the affordability, accessibility and data security of such a technology.

- 6.27 Heather Bradshaw-Martin (Humanity in Motion) expressed concern that people with disabilities could be pushed towards shared modes of transport, despite that equal access to both private and shared transport is essential to accessibility.

- 6.28 Respondents also highlighted the need to ensure that people with disabilities do not have to pay more for HARPS that meet their needs:

Many people with diverse needs are on the lower end of the income scale as a result of their limitations. CAVs (Connected AVs) and HARPS will need to be 'accessible' to them in the widest sense of the word – i.e. this will include affordability, likely through Govt., or local council community schemes. [Chris Alford (University of the West of England, Bristol)]

It is right that the apparent journey cost (price) for a disabled user should morally be no higher than for a non-disabled person, but the reality will be that the actual cost will be higher. Regulation will be required to ensure that this additional cost is either spread across all users or is subsidised by government. [Richard Morris (Innovate UK)]

- 6.29 The need to ensure that HARPS are accessible from the home of passengers was also mentioned:

The short report we funded from the Royal College of Art in 2018 revealed autonomous, highly-automated vehicles will only benefit mobility impaired people if those people are readily able to access the vehicle, and for some that means the mobility challenge begins with the challenge of leaving home, not just of immediate access to a vehicle. [RAC Foundation]

People will need to be able to gain easy physical access to CAVs/HARPS without changing their own 'at home' transport mode. For example, a wheelchair user will need to either be able to easily access the nearest pick up point, or the personalised CAV will need to be able to come to their door. This will require updating access regulations. CAV/HARPS UK manufacturers are beginning to recognise this and include appropriate wheelchair access and space in their vehicles (e.g. RDM/Aurigo 'minibus'). Easy pavement level access also required (e.g. when attending PACTS meeting a wheelchair user needed special assistance because the train station was on a bend and the platform/train gap was then too large to go straight on to the underground train). [Chris Alford (University of the West of England, Bristol)]

- 6.30 The RAC Foundation also noted that regulation must seek to prevent anti-social behaviour and discrimination directed towards HARPS passengers with disabilities.

Obligations for HARPS operators

- 6.31 Other answers made suggestions regarding the obligations could fall on HARPS operators. One suggestion was that operators should be required to demonstrate accessibility as part of the licensing process:

Regulation should require HARPS operators to evidence that they have taken vulnerable passengers' needs into consideration, particularly when utilising them in a PSV capacity. There should be a clear and transparent line of responsibility so that the people responsible for ensuring that HARPS are and remain accessible, are held accountable. [Kennedys Law LLP]

6.32 On a similar note, Burges Salmon LLP said that the licensing process could “include consideration of accessibility statements or disabled persons protection policies”, with such requirements already existing in the rail and aviation sectors.

6.33 Anxiety UK stated that regulation should prescribe:

Clear procedure in place to cover situations whereby those with anxiety wish to get off a HARP due to mental distress including being able to contact easily a designated representative of the transport operator.

Recognition and understanding that for many with anxiety, the prospect of travelling in a driverless vehicle is too daunting and therefore introduction of this form of transport may really hinder mobility in this group.

Possibility of separate highways - driverless and operated/driven lanes

Increased fears around safety in the event of an incident occurring and addressing concerns of feeling trapped /claustrophobia. Regulation should insist that staff are present on transport.

Passengers with disabilities should be able to get through to a 'real person' representing the transport operator in the event of requiring assistance, not a BOT for example.

Regular reviews to be undertaken in terms of ensuring that passenger levels are regularly monitored to stop overcrowding - a particular issue for those with claustrophobia and anxiety.

6.34 Furthermore, the Smart Mobility Unit, University of Hertfordshire suggested that the regulation could require various features, such as large door apertures, access ramps, ISO standard fixing/restraint points for wheelchairs, child seats, high visibility markings, features to support the sensory impaired and the ability to store wheelchairs separately.

The UN Convention on the Rights of Persons with Disabilities

6.35 The Equality and Human Rights Commission (EHRC) highlighted the UK’s obligations under the UN Convention on the Rights of Persons with Disabilities. This Convention, ratified by the UK in 2009, sets out international human rights standards in relation to transport. It requires the UK to take appropriate measures to ensure disabled people have equal access to the physical environment and services provided to the public (Article 9); and to enable persons with disabilities to live independently and be included in their communities (Article 19). The EHRC urged us to ensure our final recommendations enable the UK Government to be in a position to be fully compliant with its international law obligations.

Comments relating to existing regulation of passenger services

6.36 Some respondents felt that existing standards should be extended to HARPS:

We strongly suggest that the existing standards should also be applied to HARPS in addition to taxis, private hire and PSV services unless there is a specific reason why the regulation is incompatible with the technology in question. An example may be

where certain types of autonomous vehicle do not act on a basis that is comparable to current taxis or bus services. HARPS have the potential to bring many benefits to those with disabilities and who do not drive and as these groups may become reliant on these modes in the future it is important to ensure that legislation reflects promoting their inclusion. [TfWM]

We consider that any regulation relating to accessibility should mirror those that currently apply to the passenger transport industry (buses and coaches). [Stagecoach Group plc]

6.37 The Confederation of Passenger Transport (CPT) also agreed that existing accessibility regulations should be extended to HARPS.

6.38 Specifically, the UK Bus Division of FirstGroup plc (FirstGroup plc) felt that the Public Service Vehicles Accessibility Regulations 2000 (PSVAR)⁵³ should be extended:

We consider that application of PSVAR, even if the capacity of the vehicle is <22, would be sensible to set a minimum standard that passengers can expect. Ramps are a difficult area as the vehicle needs to know when they are safe to deploy, but under level 4 autonomy we recommend a manual ramp in any event as these are less prone to failure. With level 5 autonomy vehicles will by necessity require an automatic ramp. Use of HARPS will require amendments to (or derogations from) PSVAR and/or the “conduct regulations” as a passenger in a wheelchair should be assisted by the “driver” which will not be possible under level 5 autonomy.

6.39 However, TfL felt that the PSVAR did not provide a sufficient model for accessibility regulations relating to HARPS:

Considering the limitations of the Public Service Vehicles Accessibility Regulations (PSVAR) 2000, they could only be used as guidance when a new set of accessibility standards and rules are introduced for HARPS. PSVAR 2000 only apply to buses and coaches which can carry more than 22 passengers, first used on or after 31st December 2000 and operating a local or scheduled service. We firmly believe, however, that any legislation on accessibility should cover the whole range of HARPS and should be irrelevant of the size of the vehicle.

6.40 Five were also generally critical of existing accessibility regulation:

While existing accessibility provisions on existing public transport might be 'hard won', they do not necessarily demonstrate best practice; rather, they are the best way of adapting vehicles that were typically designed without any thought given to people with disabilities. Further, the provisions were developed in the context of (i) the expectation of a human driver on board the vehicle, with the requisite responsibilities enshrined in the regulations and (ii) much more limited maturity and ubiquity of consumer technology than is observed today.

Particularly with (ii) in mind, it should be permissible for a HARPS operator to demonstrate an equivalent or better capability to the PSVAR requirements using novel approaches, for instance the use of handheld (by the passenger) device to ‘request a

⁵³ SI 2000 No 1970.

stop', in place of fixed bell-push infrastructure inside the vehicle. Striking a pragmatic balance between rigid elements of any requirements that require 'baking in' to a vehicle's design and assembly versus any elements that may be delivered more flexibly, will encourage greater innovation for the benefit of both passengers and the industry, and should lead to greater accessibility as an outcome.

- 6.41 Respondents also drew attention to schemes for existing modes of passenger transport that should be extended to HARPS. The CTA highlighted their Minibus Driver Awareness Scheme, which:

provides a nationally recognised standard for the assessment and training of minibus drivers and has been designed to promote the safer operation of minibuses. As part of MiDAS, drivers are advised to plan journeys to avoid bumpy roads and speed bumps, to make changes in speed and direction smoothly and in good time, brake early and drive slowly. Elements such as these are important for users of CT who do not feel confident to take journeys on mainstream public transport, so if HARPS are to cater for these users, it is important that similar measures are put in place.

- 6.42 TfL and the Urban Transport Group recommended that the English National Concessionary Travel Scheme (ENCTS) should apply to certain HARPS to ensure that they are accessible to older and disabled people. However, the Urban Transport Group warned that extending the ENCTS to *all* HARPS would risk increasing congestion and the costs of the ENCTS.

Comments relating to themes in Chapter 6

- 6.43 The “whole journey” approach was endorsed in numerous responses to this question:

TfWM is supportive of the considerations raised and welcomes the mention of the importance of support for the whole journey. We feel that it is important that users can easily access this mode as both the sole mode and as part of a more complex, mixed modal journey with ease and the relevant information is available. [TfWM]

It is critical that as HARPS are developed, designed and introduced, the interests of disabled and older people are taken into account from the start and that the whole journey, from point of departure to destination, is considered. [the Bar Council]

The consultation document is right to recognise the need for every stage of a journey to be accessible – from initial planning to destination. In practice, this is often not the case as disruptions and breaks in the chain occur and this is likely to be true for HARPS as well. The regulations therefore need to ensure that passengers are equipped with the information they need to anticipate any accessibility gaps, understand where they may need support (and ideally have an easy means to arrange this support at minimal notice) and be well informed as to the alternatives should disruptions occur. Access to this information in a range of formats – including being able to speak to a human – will be important in giving the widest possible range of people the confidence to travel. [Urban Transport Group]

- 6.44 DAC Beachcroft LLP felt that booking platforms that are accessible to certain elderly people with less technological knowledge would be key to the whole journey approach.

- 6.45 Five also recognised the importance of the infrastructure surrounding the journey, such as at pick-up and drop-off points, being accessible:

Regulation should focus not just on the vehicles themselves, but also on the infrastructure adjustments and requirements that would support the delivery of HARPS, in particular as services that can integrate with the public transport network. In many (but not all) cases these may relate to infrastructure that is owned, controlled and / or maintained by local authorities.

For example, regulation should (if found necessary) ensure and prioritise the availability of kerbside access for picking up and dropping off passengers to maximise highly accessible connections with other transport modes [or other features]; the provision of sheltered, well lit and serviced seating areas and facilities in waiting areas; traffic management activities that priorities shared HARPS vehicles over single occupancy vehicles, etc

- 6.46 TfL and the Faculty of Advocates endorsed the development of minimum accessibility standards for HARPS in their answer to this question.

- 6.47 Kennedys Law LLP and Heather Bradshaw-Martin (Humanity in Motion) both highlighted data privacy concerns relating to collecting personal data from all passengers, but particularly those with disabilities.

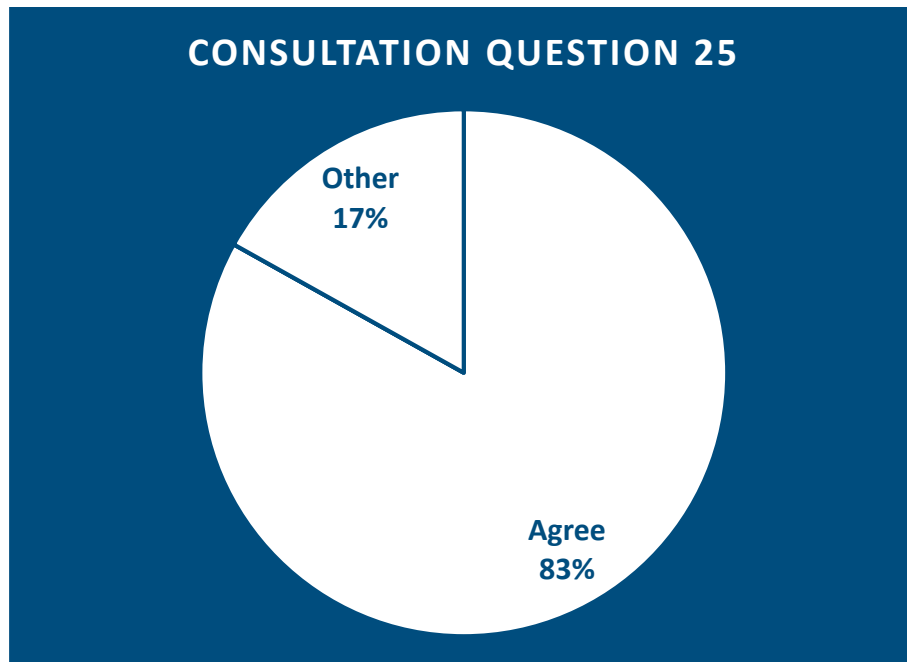
- 6.48 Furthermore, co-design was endorsed by several respondents. For example, TfL said:

We believe that legislation can promote the accessibility of HARPS by ensuring more inclusive physical infrastructure, more accessible information and effective use of assistive technologies. In the absence of human presence, further thought is required about providing passengers with appropriate support to assist them throughout their journey. This is an area where the concept of co-design would be particularly helpful by engaging early with accessibility organisations and to capture older and disabled users' needs. It is essential that the primary focus is that HARPS are accessible for all and, where needed, assistance is provided by appropriately trained HARPS staff.

- 6.49 The RAC Foundation, Kennedys Law LLP, Urban Transport Group, DPTAC and the Bar Council also encouraged co-design in their responses to this question.

CORE OBLIGATIONS UNDER EQUALITY LEGISLATION

Q25: We provisionally propose that the protections against discrimination and duties to make reasonable adjustments that apply to land transport service providers under section 29 of the Equality Act 2010 should be extended to operators of HARPS. Do you agree?



6.50 Out of the 71 responses to this question, a strong majority of 59 (83%) supported extending section 29 EA 2010 to HARPS operators. No respondent objected.

Support for extending section 29 EA 2010

6.51 Around twenty respondents agreed with the question without further comment.⁵⁴

6.52 Several answers highlighted that the regulation must, however, go beyond extending the EA 2010. For example, Disabled Motoring UK said:

This must be the minimum. With the absence of drivers disabled people are likely to be at higher risk of discrimination because there will be a lack of an authority type figure available to enforce the rules. This protection needs to go much further with HARPS and operators should be required to demonstrate that their reasonable adjustments can be properly enforced even in the absence of a driver/ The lack of drivers could cause problem with physical adjustments. For example, the deployment of ramps on trains and buses. Some sort of human assistance must still be available to disabled people that require it.

6.53 The Association of Local Bus Managers (ALBUM), Oxbotica, AXA and Sustrans also expressed similar sentiments. DAC Beachcroft LLP suggested that “combatting discrimination will require more work than it does with traditional vehicles” as HARPS vehicles will need to be programmed in a way that avoids discrimination.

⁵⁴ BIBA, CPT, CTA, Dean Hatton (NPCC), George Economides (Oxfordshire County Council), Goggo Network, Hackney Living Streets, Heather Bradshaw-Martin (Humanity in Motion), IAM RoadSmart, Law Society of Scotland, London Living Streets, LAF, PACTS, Police Scotland, SAPT, Stagecoach Group plc, Stewarts Law LLP, UKCRC, Urban Transport Group and XPI Simulation Ltd.

- 6.54 Numerous answers made specific comments regarding the duty to make reasonable adjustments. The EHRC said:

We think it would be wrong for what the UK Government rightly said was the “cornerstone of protection” for disabled people (namely the duty to make reasonable adjustments) not to apply to this new mode of transport without a clear and compelling justification.

- 6.55 The EHRC noted that once we have more experience of how HARPS may operate in practice, amendments to Schedule 2 of the EA 2010 may be appropriate, setting out how the duty to make reasonable adjustments applies to particular types of service providers. For example, this includes whether they must make physical adjustments to their vehicles. The Bar Council noted that the Code of Practice on Services, Public Functions and Associations lists factors relevant to determining what is a reasonable adjustment and suggested it could be amended to include factors relevant to HARPS. They also considered the benefits and risks of mandatory reasonable adjustments:

Consideration could be given to the use of regulations to specify which adjustments it might always be reasonable for a HARPS to have to provide (by means of EqA s.22) – to address, for example, those who do not have access to technological booking facilities. On the one hand, specific regulations would provide certainty, however prescribing reasonable adjustments which always have to be made runs the risk of creating a set of minimum standards which may stifle further steps to improve accessibility. It is hoped that co-design will mitigate the risk that provision of a HARPS for those with any disability could be considered a fundamental alteration but a clear policy steer that HARPS be designed and developed with disabled users in mind should reduce this risk and mitigate the need for adjustments to be made

- 6.56 SMMT, Richard Sarginson, MACS and TfWM felt that HARPS operators should not be required to provide exactly the same reasonable adjustments. If certain operators find it difficult to provide reasonable adjustments, Connected Places Catapult (CPC) proposed that they enter service agreements with third party providers. Burges Salmon LLP felt that exemptions should be permitted in “exceptional circumstances”.

- 6.57 Avoiding price discrimination was another key theme. The Bar Council suggested that the current price differentials between accessible vehicles compared with non-accessible vehicles could be prohibited for HARPS. The EHRC also suggested that EA 2010 provisions prohibiting taxi and private hire vehicle drivers from charging a disabled person more to travel with their guide dog should be extended. DAC Beachcroft LLP felt that HARPS should not cost more for passengers with wheelchairs.

- 6.58 Most responses who supported an extension did not predict any negative, unintended consequences. However, barristers from Temple Garden Chambers suggested it could indirectly require in-person support on HARPS. They cited the role bus drivers have under the current law in promoting operators’ compliance with accessibility requirements, and resolving issues of priority of wheelchairs over pushchairs. They also suggested that this could be an implication of the public-sector equality duty contained in section 149 of the EA 2010:

It is strongly arguable that entities running HARPS services, which exercise a public function, are required to consider whether their services should have an official on

board, as part of their “due regard” duty. The decision as to whether to place an official on HARPS bus services may affect large numbers of vulnerable people, many of whom fall within one or more of the protected groups. Therefore the due regard to the s149 equality duty in this instance is “very high”.

- 6.59 Intel Corporation (and Mobileye, an Intel Corporation company) said that extending section 29 to HARPS operators is important to avoid giving HARPS operators an advantage over other forms of passenger transport. Transform Scotland expressed a similar view.

Concern over extending section 29 EA 2010

- 6.60 No-one objected outright to the extension of section 29 EA 2010 to HARPS operators. However, some concerns were raised by those who answered “other”. For example, the Freight Transport Association (FTA) questioned how compliance with the duty to make “reasonable adjustments” could be achieved without human intervention.

- 6.61 Both Bosch and Bryan Reimer (MIT) said that extending section 29 EA 2010 would be desirable in the long-term, but that more relaxed accessibility requirements are needed in the short-term to avoid barring market entry. A similar view was expressed by Five:

In principle, we agree that the protections that apply under section 29 of the Act should continue to apply to HARPS, as far as is reasonably practicable. For HARPS that resemble existing, ‘conventional’ transportation services, (e.g. an unshared taxi or private hire service, or a regular, fixed-route bus service) an extension of the existing Act may be appropriate.

However, we note that enabling novel business models to proliferate may mean that a basic extension of the existing Act to also apply to operators of HARPS, may not be the best approach to achieve this. As an example we are not clear how an operator might balance a legal duty to carry an assistance dog, with other passenger preferences as part of a smaller, shared vehicle which may be making a one-off journey and not travelling as part of a regular and predictable service. As the Act places a legal requirement to carry an assistance dog, would it allow sufficient flexibility to manage the request according to an overall fleet of vehicles and their occupants or could this be seen as refusing a ride, if the first available vehicle does not have a sympathetic existing passenger profile?

- 6.62 Five then endorsed a mixed fleet approach to overcome these concerns.
- 6.63 KPMG LLP suggested that consideration should be given to whether private owners of passenger-only vehicles participating in peer-to-peer lending schemes should comply with the EA 2010. The British Vehicle Rental and Leasing Association felt that, if so, peer-to-peer lending schemes should be able to charge extra to offset the costs of providing reasonable adjustments.
- 6.64 In respect of the duty to provide reasonable adjustments, Richard Morris (Innovate UK) highlighted the importance of ensuring equal access to HARPS for people with and without disabilities:

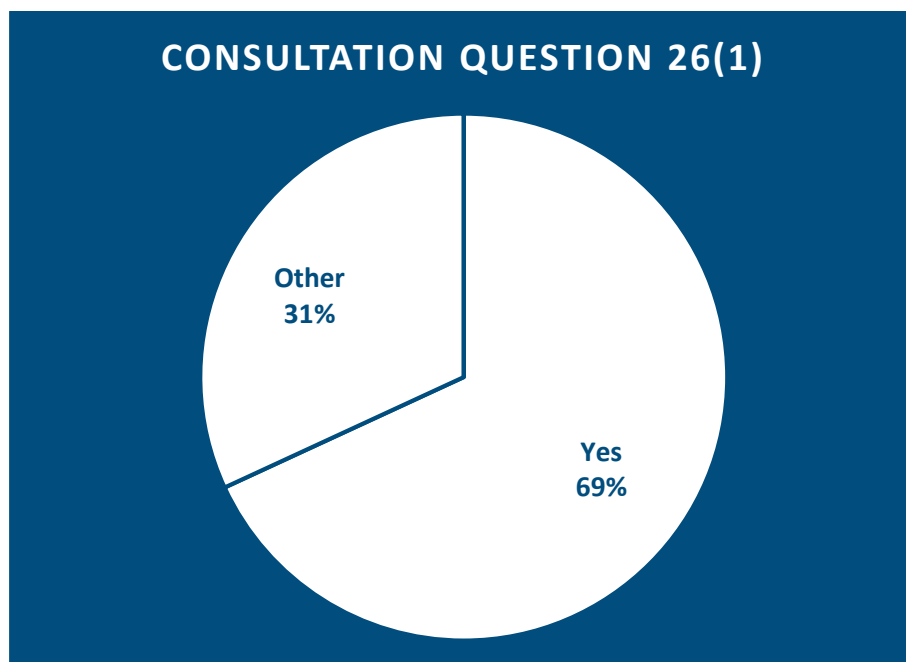
Whilst I am in favour of treating disability more favourably in transport than at present, I think that equality should still be respected and those with disabilities be given equal access to transport as those without, (in terms of both availability and cost).

6.65 Humanising Autonomy questioned if non-discrimination obligations should be programmed into the automated driving systems, rather than falling onto HARPS operators.

SPECIFIC ACCESSIBILITY OUTCOMES

Q26: We seek views on how regulation could address the challenges posed by the absence of a driver, and the crucial role drivers play in order to deliver safe and accessible journeys. For example, should provision be made for:

(1) Ensuring passengers can board and alight vehicles?



6.66 A majority of the 70 (69%) respondents that answered agreed with this question, with no respondent objecting. Of those that answered "other", many felt that accessible boarding or alighting would result from market practice, standards and/or guidelines.

Agreeing with the need to ensure accessible boarding and alighting

6.67 Many respondents who agreed with the question suggested that discharging this obligation was ultimately a matter of vehicle design, rather than the service provided. This included ALBUM, KPMG LLP, Heather Bradshaw-Martin (Humanity in Motion) and the Urban Transport Group. They highlighted the key role of manufacturers.

6.68 HORIBA MIRA said that co-design would be key to discharging this responsibility:

The proposal for co-design would not result in prohibitive costs, although some form of regulation may be needed to ensure corners are not cut. However, it is widely regarded that the principles of 'inclusive design' benefit all users by making systems easier to interact with (e.g. making interfaces suitable for visually-impaired users will tend to make them clearer for those with good eyesight by forcing de-cluttering, use

of clear colours etc.) and will therefore also be an advantage to service providers (e.g. making the service more popular, speeding up throughput at entry points).

- 6.69 KMPG LLP also supported a mixed fleet approach, given the difficulty and cost of installing certain accessibility features, such as fully-automated wheelchair ramps, on smaller vehicles.
- 6.70 Moreover, ALBUM, Heather Bradshaw-Martin (Humanity in Motion), IDAG and the Urban Transport Group suggested that infrastructure design, rather than simply the service provided, would be important to ensuring accessible boarding and alighting.
- 6.71 For HARPS that operate without transport staff, Five felt that operators should be required to provide passengers with a way of communicating any accessibility needs. They could then be under a duty to take reasonable steps to accommodate these needs. However, Five emphasised that the focus of regulation should be on the service provided, rather than vehicle design:

We think that prescribing a fixed set of physical characteristics for HARPS would in most cases be liable to heavily restrict the nature of services that can develop in the market. On the other hand, standards which relate to aspects such as minimum levels of contrast between different colours or materials to designate different features and instructions, heights of buttons and length of beeps (where used) may be less likely to inhibit innovation and more acceptable, especially if it possible to adjust the relevant features easily and at low cost.

- 6.72 In respect of the service itself, the value of support from a human was mentioned in numerous answers. For example, the Bar Council stated:

It is critical that there is a means of obtaining assistance if something does not work. This reassurance is vital – and that assistance, until any system has bedded in – would, we think, be most likely to be effective in reducing anxiety if provided by a human.

- 6.73 However, answers to this question generally did not propose that in-person support should be mandated. Instead, many said that assisted boarding and alighting could occur remotely.⁵⁵ IAM RoadSmart, ITS UK and Reed Mobility felt that operators should also offer the option of booking in-person support with boarding and alighting.

- 6.74 KPMG LLP suggested that a standard of reasonableness could apply in respect of this requirement, and that in-person support could be government-funded:

there is likely some sort of “reasonability” that could be applied, similar to that which is required by the Equality Act 2010. In the context of HARPS, “reasonability” in respect of boarding and alighting vehicles should include not only assistance for passengers physically boarding and alighting the vehicle, but also support for loading and unloading items such as wheelchairs or luggage. For example, the operator may need to ensure that the design of the vehicle has reasonable measures to enable boarding and alighting the vehicle; however, they may not be required to ensure that

⁵⁵ Stagecoach Group plc, Stewarts Law LLP, Law Society of Scotland, RoSPA, CPT, Chris Alford (University of West England, Bristol) and UKCRC.

there is an individual at both ends of the trip to assist with the process. The provision of an individual at both ends of the trip may, instead, fall under an enhanced service that the government may fund. Operators may, however, be required to ensure that there is enough room in the vehicle for both the disabled passenger and another individual, or “Carer”, so that the Carer can help with boarding and alighting. There is even a potential to require operators to offer these Carers a free or discounted ride.

- 6.75 Ultimately, it is clear from these responses that, while there is overwhelming support for this requirement, how it will be discharged in practice will depend on vehicle design, infrastructure and the service provided. The importance of this combination was captured by the Urban Transport Group:

As far as possible, vehicles and infrastructure should be designed to ensure that passengers can board and alight vehicles unaided. It is unclear how HARPS will develop. It may be that passengers are not comfortable travelling with strangers in an unsupervised space. HARPS may therefore have customer hosts on board or at key points along the route who are trained and ready to provide assistance, reassurance and information as required. Alternatively, arrangements could be made to enable passengers to pre-book assistance (including at short notice) or to easily (and affordably) travel with a carer or companion.

Concerns over requiring HARPS operators to ensure accessible boarding and alighting

- 6.76 SMMT suggested that accessible boarding and alighting would naturally result from market practice, without any need for regulation:

Over-regulation, particularly in areas where there is unlikely to be market failure or where healthy commercial competition will adequately address these challenges, may only hinder the deployment of HARPS and the development of the HARPS market. Furthermore, the likelihood of different types of commercial propositions addressing the articulated challenges should not be overlooked. We have already emphasised the mixed fleet approach in answering Question 24. In the mainstream HARPS market, some HARPS vehicles in a mixed fleet will very likely include the presence of staff to help with boarding and alighting as well as with luggage and wheelchairs. Whether the staff will be in the vehicle or stationed at designated departure and arrival points is irrelevant, as long as they are available at the point of need. Some HARPS operators offering a premium service are very likely to include assistance with luggage, boarding and alighting in their proposition anyway. It is also expected that HARPS operators serving the mobility-restricted users segment of the market will likewise very likely include similar assistance in their proposition. Regulation should only be seriously considered where there is market failure, for example if HARPS operators clearly neglect to provide access assistance in rural areas despite a clear and demonstrable need for it.

- 6.77 Bosch and Intel Corporation (and Mobileye, an Intel Corporation company) also offered a similar view.
- 6.78 Five, CPC, Burges Salmon LLP and Oxbotica felt that achieving this outcome was a matter for guidelines and standards, rather than regulation. On the other hand, Gemserv and the Metropolitan Police Service said it was a matter of vehicle design, rather than service operation. TfL suggested that it is a matter of both:

It is essential that wheelchair passengers and passengers with mobility devices have additional assistance to enter the vehicle and orientate themselves. They also need assistance to secure any wheelchairs and mobility devices and, separately, secure themselves, either in a seat or while seated in a securely anchored wheelchair. They would also benefit from a range of accessibility features built into the HARPS vehicle, e.g. high visibility features, additional lighting, intercom systems to allow interaction with the HARPS operator/and or assistants and CCTV allowing the operator to view the inside of the vehicle for additional safety and security.

- 6.79 The FTA said that accessible boarding and alighting could form part of a wider mobility strategy, rather than be imposed as a requirement on HARPS operators:

There may be a case for limitation of provision on the basis of an overall mobility strategy across towns/cities, etc. Clarification of multi-user service provision (what we would think of as bus services); timetables, accessibility, ingress/egress/assistance provision, etc; along with intermediary provision (what we think of as a taxi provision), in conjunction with alternative provision (single-user HARPS), could provide a solution to address the issue. This however would necessitate a legislative package requiring all parties (government, local authorities, HARPS providers, etc) to work together to offer mobility solutions tailored to the particular needs of its citizens/visitors.

- 6.80 The Scottish Association for Public Transport felt that imposing this requirement would undermine the economic benefits of HARPS.

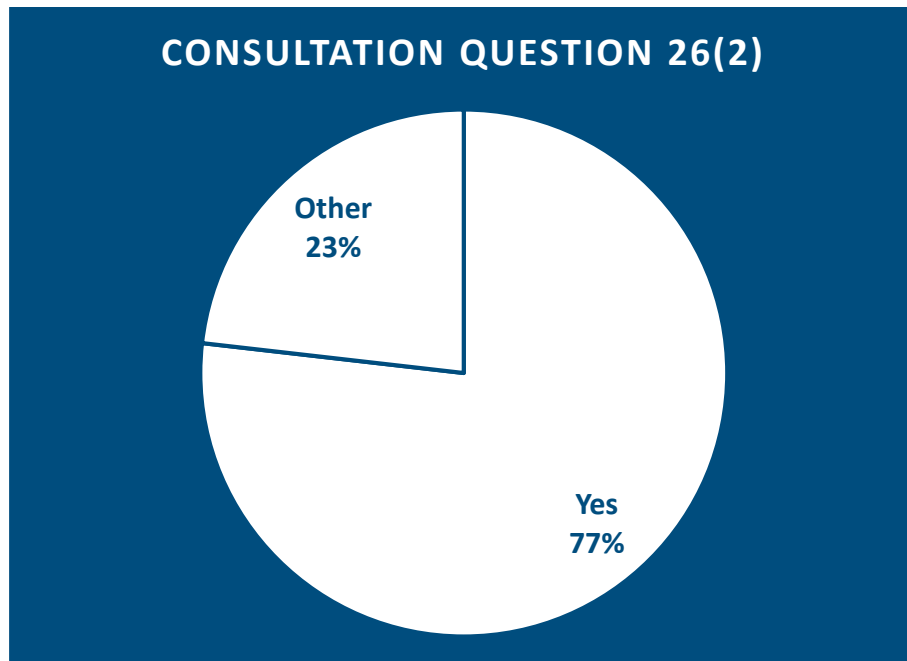
- 6.81 Other respondents who answered “other” mentioned key themes underlying Chapter 6. SMMT and TfL endorsed the “whole journey” approach, while DPTAC explained the benefits and potential risks of the outcome-based approach:

The outcome-based approach provides the opportunity of futureproofing relevant or new regulations to reflect changes in society and demographics and therefore demand - especially in light of internal configurations of vehicles at a later date. For example, wheelchair users may also be travelling with prams, and just one space on a bus at peak time is going to have a heavy demand for it.

While supporting the outcome-focussed approach as the best solution we recognise that it will be challenging to implement in such a way that it meets the needs of all disabled people. Setting robust and achievable standards will require rigorous consideration and great care will be needed to set clear measurable outcomes.

- 6.82 SMMT also said an outcome-based approach risks inconsistency in layout, which risks “creating an additional access barrier as users struggle to locate what they need in an unfamiliar environment.”

(2) Should provision be made for requiring reassurance when there is disruption and accessible information?



6.83 Of the 69 respondents who answered this question, 53 (77%) agreed. None of the respondents disagreed, and those that answered “other” cited reasons such as that this could be promoted through guidelines.

Support for requiring reassurance and accessible information upon disruption

6.84 Many responses explored the range of potential methods of communication. Pinsent Masons LLP suggested:

24/h customer service with trained staff; audio visual displays in the vehicle showing clear and up-to-date information; accessible ways to view apps on smart devices (including voice alerts).

6.85 Five recommended call points similar to those currently used on public transport, while Urban Transport Group suggested machine-based interfaces. FirstGroup plc said operators should be able to communicate directly with passengers or, in response to a push-button request, to the whole vehicle. SMMT suggested real-time communication over an app, but said that regulation should require accessible communication without prescribing a particular method.

6.86 DPTAC highlighted the need to ensure passengers can speak with a human:

We believe that one accessibility outcome which will be particularly important to ensure that services are accessible is the ability for the passenger to speak to a human being to obtain advice and guidance about using the service. Indeed, it is likely that this is not solely a requirement for disabled people, observing passengers puzzle over how to use the universally accessible toilet on a train demonstrates that many people struggle with simple automated designs whether or not they are disabled. While operators may hope that graphic images and even simple videos will resolve

most of these problems there are always likely to be some who need more assistance, and this may be particularly important for those with cognitive impairments. The ability to interact with a human being also needs to take account of how to deliver assistance to passengers who have hearing loss.

- 6.87 Another key theme from these responses was the importance of ensuring the information communicated reflecting the needs of passengers. CPC felt that passengers should be able to connect to service centres that could provide information specific to their needs. Chris Alford (University of the West of England, Bristol) suggested the use of “smart travel cards” that would possess information about passengers that could enable operators to provide them with appropriate information. Five also said that passengers should be able to notify operators of their individual communication preferences relating to disruptions.
- 6.88 KMPG LLP felt that “accessible information” should be defined, with the criteria provided by the International Transport Forum (being clear, concise, accurate and timely) providing a basis. They also said that a “whole journey” approach should oblige operators to provide accessibility information about the final destination.
- 6.89 Respondents such as CPC, Urban Transport Group, MACS and SMMT emphasised the inadequacy of reassurance and information provided by existing passenger services, such as railways. For example, MACS said:

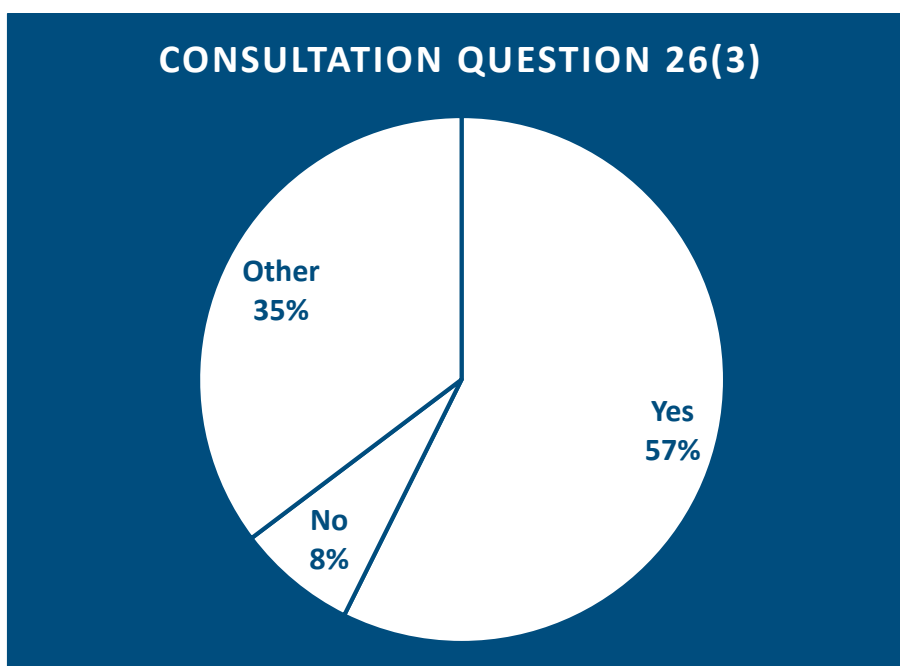
Problems exist with information about services at present and the entire system, related to the above, and types of format, size of font and the manner in which accessible information is conveyed needs to be revisited and made accessible. Accessible information should be a standard and not the exception. As an example, as more routes are being formed the timetables that are posted at bus stops have not increased in size, therefore, the font is getting smaller to the extent that someone who does not have a sight, cognitive impairment or mental health disability can't read what is being displayed at present.

- 6.90 Disabled Motoring UK also emphasised the importance of information being provided in accessible formats.

Answering “other”

- 6.91 University of Sheffield law students suggested “a marriage of humans and machines” would be required, with stewards playing a vital role in replacing the “social function” of drivers. On the other hand, Reed Mobility suggested that such reassurance will only be necessary in the short-term until people get used to HARPS, while Oxbotica said that it is a matter for guidelines or standards rather than regulation.

(3) Expansion of support at designated points of departure and arrival?



6.92 Overall, respondents were in favour of this requirement. Out of the five respondents who objected and those who answered “other”, reasons given included impracticability and that it was matter for infrastructure design not service operation.

Backing for expanding support at designated points of arrival and departures

6.93 Around 12 respondents agreed with this question without further comment,⁵⁶ while 13 agreed and noted that the same considerations raised in their previous answer applied equally to this question.⁵⁷

6.94 RoSPA highlighted the different forms this support could take, ranging from in-person support to remote communication:

Some HARPS will continue to rely on human staff on board or at stopping points for example, who can provide support to passengers. For these services, the emphasis on staff training to provide appropriate support to disabled passengers should continue. These staff would need accessibility awareness training to guarantee a consistent and reliable service to all. People who provide assistance remotely through a technological interface, such as via video link or on the phone, should also be trained to assist people with disabilities. In some cases, human machine interfaces may be used. It is vital that human-machine interface is designed to be inclusive and that it can deliver the necessary capabilities effectively and be dependable. For example, it

⁵⁶ Anxiety UK, Dean Hatton (NPCC), George Economides (Oxfordshire County Council), IAM RoadSmart, Stevenage Borough Council, Transform Scotland, London Living Streets, Hackney Living Streets, Police Scotland, Sustrans, DAC Beachcroft LLP and University of Sheffield law students.

⁵⁷ Bosch, Burges Salmon LLP, Bar Council, AXA, ABI and Thatcham (joint response), Aviva, Stagecoach, Stewarts Law LLP, Law Society of Scotland, TfWM, UKCRC and the Smart Mobility Unit, University of Hertfordshire.

should be possible for the human-machine interface to communicate both visually and aurally so as to cater for both vision-impaired and hearing-impaired passengers.

- 6.95 TfL also noted the importance of both in-person and remote support.
- 6.96 Other respondents gave different practical suggestions as to how such support could be provided. Five suggested that accessibility features at existing departure and arrival points should be expanded, while the Urban Transport Group said that cost-savings from removal of drivers could be used to provide this support. Goggo Network said that in-person support would not be necessary, with this support normally being provided by other passengers.

Concerns over expanding support at designated points of arrival and departures

- 6.97 Most respondents who answered “other” referred to their previous answers. Chris Alford (University of the West of England, Bristol) again suggested the use of “smart travel cards”:

This may mean the use of a 'smart travel card' (as above that holds personal details of their special requirements. For a smaller (e.g. individual passenger) HARPS this may also mean the use of a generic plug-in interface that similarly holds their personal information but also enable them to communicate with and control the vehicle within their capabilities re. modes of operations (e.g. voice control for those with limited physical abilities, similarly, significant visual limitations). A generic control interface that reads their personal travel card and automatically sets up compatible communication would also be appropriate here.

- 6.98 FirstGroup plc and Pinsent Masons LLP questioned whether providing such support was commercially viable, while ALBUM said it is a matter of vehicle design rather than service.

Objections to expanding support at designated points of arrival and departures

- 6.99 The five respondents that disagreed gave different reasons. P. Whitfield Consulting said that this would be an “impractical” requirement, while Garry Staunton (UKAEA) said it would encourage operators to use stopping points without this overhead. Amey Consulting said that the requirement was “too woolly”, and KMPG LLP said that improving infrastructure will not be the responsibility of operators.

DEVELOPING NATIONAL MINIMUM ACCESSIBILITY STANDARDS FOR HARPS

Q27: We seek views on whether national minimum standards of accessibility for HARPS should be developed and what such standards should cover.

- 6.100 There were 69 responses to this question, with overwhelming support for the development of minimum accessibility standards for HARPS.

Benefits of minimum accessibility standards

- 6.101 TfL felt that the standards should enshrine an outcome-based approach modelled on existing regulation for passenger services that would not inhibit innovation:

While we welcome the idea of developing national minimum standards of accessibility for HARPS, we feel that it will be impossible to know what such standards should cover at this very early stage. We thus believe that standardisation needs to be outcome-based rather than outputs-based.

The standards of accessibility currently in place for purpose-built London taxis, accessible London PHVs and London buses, including Dial-a-Ride services, provide a reasonable baseline that could be used to build on and define minimum standards of accessibility for HARPS. These services provide a range of accessibility features which provide support to millions of ambulant, elderly and disabled passengers. Similar standards and equipment are utilised in transport services around the UK and are well recognised by operators and passengers, DfT, DVSA, etc.

Developing a set of minimum standards will also ensure a degree of consistency which in turns could help reduce the levels of anxiety for older and disabled passengers. In the future, compliance with these minimum standards should be made a condition of HARPS operator licensing.

We ought to make sure, however, that such standardisation does not inhibit innovation and we would thus encourage an initial phase of design experimentation and co-creation to explore new solutions.

6.102 SMMT also emphasised the need to balance accessibility with innovation. They said that mixed fleets should be permitted, with accessibility-enabled vehicles being subject to standardised layouts. Standards would cover the ease of boarding and alighting, seating comfort and special access to communication with operating centre staff. AXA, HORIBA MIRA, DAC Beachcroft LLP, the Law Society of Scotland and John Rainbird also supported minimum standards, providing they do not stifle innovation.

6.103 Additionally, the importance of minimum accessibility standards providing more than the “bare minimum” was stressed by MACS, Urban Transport Group and ALBUM.

6.104 Mixed views were expressed on whether existing regulation should provide the basis for accessibility standards. FTA warned against repeating the failure to account for the changing needs and profiles of users, while Richard Morris (Innovate UK) recommending improving upon existing regulation by requiring the standardisation of key features and interfaces, such as door handles. However, other responses⁵⁸ suggested that existing regulation should provide the baseline for minimum standards.

6.105 Both the Smart Mobility Unit, University of Hertfordshire and University of Sheffield law students felt that minimum accessibility standards would maximise the accessibility benefits of HARPS.

6.106 The EHRC advocated for standards partially on the basis that extending section 29 EA 2010 alone would not be sufficient to ensure accessible HARPS:

Paragraph 3 of Schedule 2 to the EA 2010 states that, in relation to the provision of a service which involves “transporting people by land, air or water,” it is “never reasonable for A [the service provider] to have to take a step which would involve the

⁵⁸ IAM RoadSmart, Stagecoach Group plc, CPT, Reed Mobility and TfL.

alteration or removal of a physical feature of a vehicle used in providing the service". In other words, in order to secure genuine accessibility, the legislative 'lever' needs to be national minimum accessibility standards, rather than reliance on the duty to make reasonable adjustments.

In our experience, transport providers do not always understand the concept of reasonable adjustments, which can lead to inconsistency in the application of the requirement and, therefore, uncertainty for disabled passengers in what they can expect. We think it is better for more clearly defined minimum accessibility standards to be created, for which HARPS operators can be more easily held to account.

6.107 They also emphasised that inclusive design benefits everyone, and that accessible HARPS are more likely if standards are legislated for and supported by enforcement. They endorsed the "whole journey" approach and the importance of avoiding retrofitting, recommending that standards cover both vehicle design and surrounding infrastructure.

6.108 The CTA said that standards should cover disability awareness training for transport staff, along with audio-visual announcements on-board and real-time information at pick-up points. Reed Mobility felt they should cover access, in-vehicle adaptations, fixing points, interfaces, the conspicuity of markings and adaptations for those with sensory impairments. Both RoSPA and TfWM endorsed standardisation of both the layouts and the booking process.

6.109 The UKCRC, FTA, Stewarts Law LLP, Humanising Autonomy and DAC Beachcroft LLP endorsed co-design and said that the standards should be developed by people with an understanding of a range of accessibility needs.

Establishment of an expert group

6.110 DPTAC recommended the establishment of an independent accessibility advisory board to address challenges caused by operators taking different approaches to meet accessibility outcomes. They suggested that the body could approve the accessibility of HARPS, advise developers, sponsor research on ways of achieving accessibility outcomes, evaluate the effectiveness of the outcome-based approach and recommend amendments if necessary:

This body should operate at a national level and approval of designs should be a prerequisite before licensing of a HARPS service at a national level, and with input at a local level, can be granted. We believe that some form of national assessment will be important to help promote a degree of consistency in design and prevent significant differences in quality of accessibility between areas. Disabled people travelling from one part of the country to another must know what HARPS services and other transport services at their destination, will be accessible to them. This can also be promoted through improved mobility as a service.

6.111 The Suzy Lamplugh Trust similarly recommended the appointment of an expert group to identify the necessary standards.

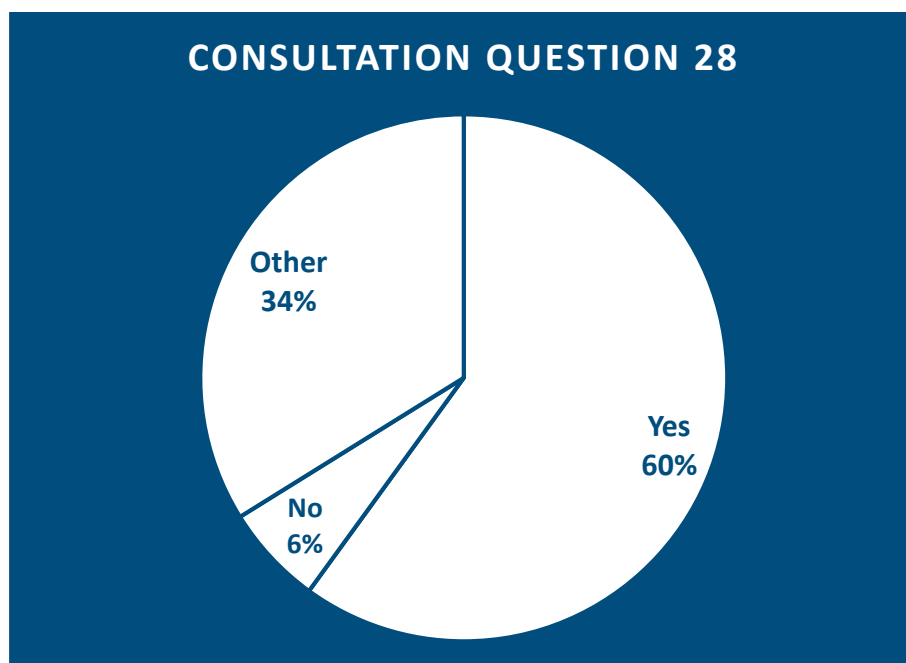
Concerns relating to minimum accessibility standards

6.112 Burges Salmon LLP questioned whether national minimum standards would "be possible or helpful" at this stage, preferring instead guidance or codes of practice.

Wayve and Pinsent Masons LLP also questioned whether it would be possible to effectively identify what these standards should include at this stage. Five were additionally concerned about this, suggesting there should be plans to improve the breadth and depth of accessible travel provision in the market over time. As an alternative, they said that disabled people could reasonably be expected to travel with someone if using a HARPS that is not very accessible. However, they did suggest that guidance for HARPS operators developed via co-design, could offset these issues.

ENFORCEMENT MECHANISMS AND FEEDBACK LOOPS

Q28: We seek views on whether operators of HARPS should have data reporting requirements regarding usage by older and disabled people, and what type of data may be required.



6.113 Most respondents favoured data reporting requirements relating to disabled and elderly people. Common themes within the five responses that objected and the 22 respondents that answered “other” included the need to comply with data protection laws and to collect data from all users to avoid discrimination.

Support for national data reporting requirements

6.114 Several responses⁵⁹ suggested that data recording would help identify any unforeseen challenges relevant to inclusivity, allowing analysis of whether HARPS are increasing the mobility of disabled and older people. If data indicated that HARPS had not increased mobility, it was felt that this could encourage operators, regulators and manufacturers to take further action to promote accessibility. The Chartered Institution of Highways and Transportation said that lack of data about usage relating to existing transport modes makes it difficult to improve their accessibility.

⁵⁹ AXA, Bar Council, IUA, Stewarts Law LLP, TfWM and the Smart Mobility Unit, University of Hertfordshire.

6.115 Some respondents favoured a wide range of data being collected. For example, Reed Mobility suggested that data should be collected on frequency of use, frequency and types of requests for additional support, trips not delivered by the HARPS operator due to the customer's additional needs, trips aborted by the customer, use of in-vehicle interactive tools and customer feedback. Amey Consulting suggested that data on "age, length of journey, stoppage time and time to embark/debark" should be collected, while Kennedys Law LLP recommended data collection on "vehicle usage, issues identified that have not already been addressed by operators, performance and complaints".

6.116 However, many respondents⁶⁰ drew attention to the need to ensure that data protection laws were still complied with and that privacy is respected. For example, MACS said:

This is a difficult question to answer because operators of HARPS need to comply with GDPR and any disclosure of disability or age must always be voluntary because many people, especially those with hidden disabilities, may not want to disclose. Perhaps systems should be developed by where the person who is older or disabled could enter the relevant information via an app, in writing, or verbally depending on the individual's abilities.

Whatever method of voluntary disclosure is put in place it must be a consultation and in coproduction with older people and disabled people to ensure accessibility and that any request for such information is not perceived to be mandatory and intrusive. Disclosure must at all times be voluntarily without any pressures being put on the individual.

6.117 Additionally, the Law Society said HARPS operators will need to conduct a Data Protection Impact Assessment to identify and assess data protection risks, seeking the views of affected data subjects and their representatives "where appropriate".

Objections to national data reporting requirements

6.118 The four respondents that objected did so for different reasons. Heather Bradshaw-Martin (Humanity in Motion) said that collecting data only upon older and disabled people would be discriminatory. Oxbotica claimed that collecting such data would be difficult, and Garry Staunton (UKAEA) felt that any data would not accurately show accessibility needs. Maple Consulting Ltd said that it would be possible only if "mobility passes" were created.

Concerns over national data reporting requirements

6.119 TfL saw both the potential benefits and difficulties of collecting such data:

Whether reporting requirements should extend beyond collisions to usage data such as passenger numbers and trip characteristics can be a matter of lengthy debate. In the absence of a baseline, at least at the beginning, the efficient usage of such data would be equally challenging.

As integrated transport authority, we can see the benefit of collecting users' data and utilising it to monitor performance, identify any problems and seek solutions. We see

⁶⁰ For example, see the responses of the Law Society Scotland, DAC Beachcroft LLP, CPC, MACS, Kennedys Law LLP, Intel Corporation (and Mobileye, and Intel Corporation company) and IDAG.

no reason why the usage data should be restricted to older and disabled users. It would be particularly useful, for example, to see anonymised trip data such as day, time, location of pickups and drop-offs, waiting time, trip mileage and trip duration. We also think that dead mileage data (i.e. vehicle running without passengers) will be key information when considering the wider impact of HARPS on congestion and the wider network.

6.120 As a result, they suggested that data recording powers should be given to transport and local authorities, providing that they are not used in a way that goes “against the principles of an open and competitive market”.

6.121 SMMT felt that collecting data on age would be prohibited by data protection laws, but that data on usage by people with disabilities would naturally and legally be collected from the booking of HARPS vehicles with accessibility features. Furthermore, they felt that feedback surveys of both disabled and non-disabled people could identify accessibility needs. They suggested that the surveys could record: disability type, ease of booking, ease and clarity of pre-boarding procedures and physical access, journey experience including level of comfort and perceived safety, ease and clarity of understanding of real-time journey information and alighting the vehicle, and experience with staff assistance.

6.122 HORIBA MIRA also felt that surveys should be conducted of all users, as collecting data from disabled people only could result in:

Excessive admin overheads, inaccurate data leading to wrong decisions, failure to capture data on non-users and GDPR issues in capturing very sensitive information about users, not to mention the difficulty in identifying disabilities (would they be expected to ask people face to face? Or to guess from their behaviour? Or would users have to self-declare when signing up to the app? None of these methods seem acceptable or accurate

6.123 Nominet, Pinsent Masons LLP and Burges Salmon LLP also raised data protection law concerns, and Tim Marlow Ltd felt that privacy concerns could be averted if data is anonymised.

6.124 The British Parking Association suggested that data collecting requirements should be the same for all passenger services.

6.125 The Urban Transport Group suggested that the English National Concessionary Travel is a useful example of data collection, but that data protection concerns may arise if data is collected outside of an equivalent scheme for HARPS. ALBUM, CPT, FirstGroup plc and Stagecoach also suggested that a concessionary scheme could potentially allow for some data to be collected.

CASE STUDIES

Guide Dogs Roundtable

6.126 On 14 January 2020, we met with seven people from Guide Dogs UK. Two were fully-sighted staff members, while five were visually impaired members of Guide Dogs UK who own guide dogs.

- 6.127 All members agreed that HARPS may dramatically improve their mobility. Recognised potential benefits included the ability to travel spontaneously, increased independence, decreased reliance on family members and less of a need to plan journeys in advance.
- 6.128 However, all members expressed great concern over the safety risks from other passengers that would be posed to visually impaired people in shared vehicles. They emphasised that this risk would be higher than with existing passenger services, in which the driver can intervene and there is often less proximity between passengers than there may be in HARPS vehicles. They said the risk would be so great that it may prevent people with visual impairments from using shared HARPS. Members also expressed concern that other passengers may not want to share a vehicle with their dog.
- 6.129 Additionally, members emphasised the potential difficulty of locating the vehicle and their end-destination upon alighting the vehicle without driver assistance. Innovative suggestions were made to address this, such as remote visual assistance and vehicles playing personalised songs to help the passenger locate it. Another concern raised was the potential difficulty of hearing HARPS if they were to run on electricity.
- 6.130 The importance of voice control and voice over to enable communication with the vehicle was also stressed, along with the need for accessible communication of divergence and disruptions and accessible booking platforms.

Anxiety UK survey

- 6.131 We worked with Anxiety UK to develop a seven-question, anonymised survey for Anxiety UK members to help us better understand transport issues faced by people with anxiety. The results, taken from 17 responses, are set out below.

SQ1: Do existing forms of public transport make you anxious? If so, how?

- 6.132 Thirteen respondents said that they experience travel-related anxiety from existing forms of transport. Sources of anxiety included: antisocial behaviour that is ineffectively dealt with; lack of mental health training for transport staff; lack of control over the vehicle, infrequent and unreliable bus services; overcrowding on transport, stopping and departure points; noise and air pollution; traffic jams; lack of seating; diversions; booked seats being taken by someone else, pickpocketing; delays; booking e-tickets; lack of transport staff; poor communication of journey changes and unexplained disruptions and stops.

- 6.133 Four people answered “no” to this question but did not explain why.

SQ2: Do you think HARPS could reduce your travel-related anxiety? If so, how?

- 6.134 Views on this question were split. 10 respondents felt that HARPS would not reduce their travel-related anxiety. Reasons included lack of human control over the vehicle, especially upon an accident or unexpected journey disruption. However, the remaining seven respondents felt that HARPS could improve their travel-related anxiety for reasons such as that HARPS may provide more reliable, frequent, quieter and direct services, not having to interact with a human and less dependency on transport staff.

SQ3: Do you think HARPS could increase your travel-related anxiety? If so, how?

6.135 15 out of the 17 respondents felt that HARPS could increase their travel-related anxiety. Concerns were expressed over a lack of transport staff to assist if there is anti-social behaviour, they experience a panic attack or something goes wrong, potential machine error and unreliable technology, lack of human control and feeling unsafe. However, benefits of HARPS were also stated as including the removal of emotions and risks of bad driving, along with reliance on real-time information.

SQ4: HARPS operate without a driver. Do you think this would affect your travel-related anxiety, and if so, how?

6.136 Two respondents felt that this would not affect their travel-related anxiety. Another two respondents also felt that it would not if they were automated safely or if there was transport staff present. Additional concerns raised by the remaining 15 respondents included distrust of the technology, lack of control, antisocial behaviour and lack of a human to turn to if there is an incident. Answers also suggested that a public education campaign and giving passengers the ability to control the automation to some extent might help reduce anxiety.

SQ5: If the lack of driver might increase your travel-related anxiety, how could the lack of driver be made up for?

6.137 15 of the responses gave various suggestions, ranging from an on-board supervisor, CCTV, passenger control, an override option, panic button, attendants, signage indicating that vehicle is driverless, the ability to trigger real time communication with a control centre and rigorous testing. However, two respondents said the lack of driver cannot be compensated for.

SQ6: What services or features could HARPS offer to reduce travel-related anxiety? An example could be a panic button and a two-way communication system between passengers, transport staff, remote supervisors and/or emergency services.

6.138 Suggestions included: transport staff; a panic or stop button; a two-way communication system with operators; emergency services and/or mental health professionals; trial runs; screens showing real-time updates; calming music; clear communication of pricing, routes and stopping points; and the recording of accidents and near-misses. One respondent said they would never use HARPS regardless of what measures were in place, and another said that giving passengers control would increase, rather than reduce, their anxiety.

SQ7: Please let us know if you think there is anything else that the new laws should address or if you have any additional comments.

6.139 Suggestions included making provision for suspending a service until the problem has been proven to be rectified if there is an incident, more recognition of travel anxiety and government/travel companies providing support and transport attendants.

6.140 Other concerns noted included deterring people from using public transport due to safety concerns resulting in an increase in private car usage and congestion, lack of assistance with boarding transport or buying tickets, antisocial behaviour, random errors and people or animals being run down indiscriminately. Further recognised benefits included improved traffic flow and the potential for independent travel.

Disability Equality Scotland poll

6.141 Disability Equality Scotland send out a weekly poll to its members. They chose to ask two questions relating to our consultation.

Poll question 1: Do you agree with the accessibility outcomes proposed by the Law Commission?

6.142 Out of 275 respondents, 98% answered yes (270) and 2% answered no (five). Overall, the comments were very positive. For example, one respondent said:

A positive looking set of outcomes for a change. Well done Law Commission. Leading the way! Just a pity other transport operators don't follow suit and redesign their transport services using these outcomes as a baseline.

6.143 Responses encouraged engagement with disabled people in the development of the accessibility outcomes. Concerns included the need to provide for the safe removal of disabled passengers upon breakdown, to address inequality generally and for the outcomes to be supported by enforcement.

Poll question 2: Do you think national minimum standards of accessibility should be developed for Highly Automated Road Passenger Services (HARPS)?

6.144 Out of 22 respondents, over three quarters answered yes. Responses acknowledged that HARPS could increase the independence of those who cannot drive or afford to adapt their vehicle. Suggested standards included: complete provision for wheelchair users and mobility aide users, minimising empty cruising, two-way communication transport system, requiring background checks and driving licences for operators, limiting certain HARPS to people who cannot use other forms of public transport and priority seating.

6.145 Some respondents were concerned about a shortage of accessible vehicles, the impracticality of sharing, lack of evidence of safety, the cost of additions to existing infrastructure and inadequate GPS signal.

THE WAY FORWARD

6.146 There was strong support for building accessibility requirements into the regulatory framework for automated vehicles from the start. As the EHRC commented, “the time is now” to avoid the expense, delay and sub-optimal outcomes of retrofitting vehicles and infrastructure down the line. This will need to be done flexibly in order not to stifle innovation.

6.147 The Government’s March 2020 Future of Transport Regulatory Review call for evidence⁶¹ also highlights the need for early action on accessibility:

As new technologies and services change the way we use, access, and experience transport, now is an opportunity to embed accessibility and equality at the centre of

⁶¹ DfT, *Future of Transport Regulatory Review: Call for Evidence* (March 2020), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/873363/future-of-transport-regulatory-review-call-for-evidence.pdf.

the regulatory framework for new technologies and modes of travel, whilst ensuring that current protections for all passengers are respected and preserved.

- 6.148 The call for evidence goes on to ask for examples of best practice from around the world to improve access to transport for those with protected characteristics under the EA 2010 (which include age and disability) and how regulation of future transport technologies and services can secure equitable access to transport. Our project is part of the wider regulatory review of future transport and we will continue contributing to this work.
- 6.149 Two key provisional policy proposals specific to accessibility which received significant support from consultees included:
- (1) extending the duty on service providers not to discriminate and to make reasonable adjustments under section 29 EA 2010 to HARPS operators; and
 - (2) developing national minimum accessibility standards for both vehicle design and whole user experience relating to HARPS.
- 6.150 We plan to return to these proposals in Consultation Paper 3, looking at how accessibility standards for HARPS might be developed, administered and enforced. There are several possibilities. Accessibility standards could be part of the remit of the HARPS operator licensing agency or of an independent body like the EHRC, for example. We also note that disability groups uniformly supported national licensing for HARPS operators, emphasising the importance of consistent standards and enforcement. As noted in Chapter 3, we plan to develop this further in Consultation Paper 3.
- 6.151 Many responses highlighted that some of the specific accessibility outcomes we considered, such as helping passengers in and out of vehicles, may require human assistance for some time. One way to address this, pending a technological solution (if one can be found) would be to have such journeys catered for by conventional vehicles with human drivers rather than HARPS. Alternatively, there may be a role for human conductors on-board HARPS vehicles – especially larger ones – for example. Our suggestion that regulation should specify outcomes for users, rather than prescribing how those outcomes should be achieved, was widely supported.
- 6.152 We note that the development of Mobility as a Service (MaaS) platforms, integrating overall transport provision, could play an important role in ensuring journeys can be fulfilled by the more appropriate service, whether HARPS or in human-driven vehicles for example. We think that no “one size fits all” solution would be appropriate for HARPS, which may vary widely both in size and mode of operation, including hop-on, hop-off models, and those that are exclusively pre-booked. A mixed fleet approach may be one way of providing an accessible HARPS overall, although we understand that this may not be a viable approach for every HARPS operator to take.
- 6.153 Ultimately, different accessibility requirements will be appropriate for different use cases for HARPS, which must be considered as part of the overall transport mix.

Chapter 7: Regulatory tools to control congestion and cruising

OVERVIEW

- 7.1 The Consultation Paper outlined two visions. In the positive vision, Highly Automated Road Passenger Services (HARPS) would reduce dependency on private cars and improve mass transit. In the negative vision, large numbers of vehicles would cruise empty on urban roads, adding to congestion.
- 7.2 We were keen that local authorities should have all the tools they need to promote the positive vision and minimise the risks. We therefore looked at four possible levers for controlling how HARPS are used: Traffic Regulation Orders (TROs); parking charges; road pricing; and quantity restrictions (including a phased introduction and a long-term cap on numbers of vehicles operating in a given area). We received many thoughtful and detailed comments on these issues.
- 7.3 In relation to TROs, there was broad consensus that TROs should be digitised and that the process for creating them should be simplified and expedited. There was support for the Department for Transport (DfT) review, TRO Alpha.⁶²
- 7.4 Views differed on how far empty cruising may be a problem. Some consultees saw it as a major concern, fearing that vehicles would spend time between passenger journeys circling around to avoid expensive parking. Others thought that HARPS raised no more risk of empty cruising than other vehicles.
- 7.5 There was considerable interest in parking charges and road pricing, and how they might be balanced to ensure the successful deployment of HARPS. Many consultees pointed to the need to look again at road pricing as a way of managing road space. However, views were split on whether HARPS should be treated differently from other road users. Many consultees thought that any review of road pricing should apply generally, not just for HARPS.
- 7.6 On quantity restrictions, the majority of consultees agreed with an initial phased approach to HARPS introduction. However, longer-term control of numbers proved controversial. Consultees were split as to whether the market can be relied upon to prevent oversupply of HARPS, and what conditions are required for effective competition.

⁶² DfT, *Traffic Regulation Orders and Associated Data: Policy Alpha*, <https://www.digitalmarketplace.service.gov.uk/digital-outcomes-and-specialists/opportunities/9826>.

TRAFFIC REGULATION ORDERS

Q29: We seek views on whether the law on Traffic Regulation Orders needs specific changes to respond to the challenges of HARPS

- 7.7 In the Consultation Paper, we explained that local highway authorities (in Scotland, roads authorities) have wide powers to regulate the use of a given road, either by traffic generally or by a class of traffic. These regulations are implemented by TROs.
- 7.8 TROs are commonly used to implement parking restrictions and designate bus priority lanes. However, they have the potential to be used in many ways. They could, for example, restrict automated vehicles on a given road. Alternatively, they could prohibit all vehicles other than automated vehicles, providing segregated lanes.
- 7.9 In preliminary discussions, consultees explained that TROs provide wide, flexible powers. However, the procedure for creating TROs was expensive, cumbersome and out-of-date. There was also widespread concern that many TROs are not in a digital, machine-readable format. Instead, they are held in a variety of formats, including paper sheets in filing cabinets and electronic documents on computer drives.
- 7.10 We noted existing initiatives in this field, including a DfT review of the legislation, known as TRO Alpha. We did not intend to replicate this work. However, we welcomed views on whether any particular changes to TROs were needed to respond to the challenges of HARPS. We said we would pass those views to DfT.
- 7.11 In all, 58 consultees responded to this question, of which 39 (68%) proposed specific changes to the TRO framework and 12 (21%) argued against such changes. Six did not come to a firm view.
- 7.12 Some consultees stressed the flexibility of TROs. As Dean Hatton (National Police Chiefs Council) said:
- TROs are wide ranging and should be able to cope with the introduction of HARPS as they ultimately control the space in which vehicles operate, regardless of automation or otherwise.*
- 7.13 However, many consultees argued for greater digitisation, more streamlined procedures and increased standardisation in respect of TROs. Automation and decarbonisation have the potential to revolutionise urban transport, and local authorities will need streamlined powers to respond.

Creating and maintaining digital TROs

- 7.14 Consultees thought that HARPS will rely on digital mapping for many basic functions, from recognising one-way streets to knowing where to park. Therefore 24 consultees argued for more digital TROs.
- 7.15 The British Parking Association (BPA) described digital TROs as “mission-critical”. In addition to “a substantial one-off effort” to ensure that TROs are “fully digital and entirely accurate” there will be an ongoing maintenance duty. In particular:

The creators of TROs – primarily local authorities but also other bodies – will need to ensure that:

- *TROs reflect all on-street restrictions with accuracy and reliability*
- *TROs are constantly maintained and adjusted to meet traffic management requirements*
- *TROs are kept updated with changes to road layouts*
- *Any signing required for non-HARPS vehicles, pedestrians, etc continues to match the TROs as they change.*

7.16 Five also pointed to the need for faster, more cost-effective procedures to create TROs in map-based form:

in areas where TROs are heavily used, it is likely to be difficult for an operator to deploy HARPS at any meaningful scale and in compliance with the relevant rules or restrictions if the current TRO process is not made more cost effective, much faster to implement (including at or approaching real time especially for temporary TROs), and with mandatory map-based elements (unless there is a good reason why map-based descriptions are not achievable).

7.17 Autonomous Intelligent Driving GmbH (AID GmbH) also recognised the importance of increasing the digitisation of TROs to HARPS developers.

A simpler process for creating TROs

7.18 Many consultees criticised the procedure for creating TROs as lengthy and costly. The Chartered Institution of Highways & Transportation (CIHT) explained that a simple TRO can take 14 weeks, but a complex TRO takes over 12 months. A single TRO can cost £15,000.

7.19 The Local Government Association said that it had “long advocated comprehensive reform” of the process for creating TROs:

The current requirement for the publication of TROs, the consultation requirements and the bureaucracy involved in inquiries constrains the ability of highway authorities to manage traffic on their network.

7.20 Transport for West Midlands (TfWM) thought that “a simplified and digitised procedure would be beneficial for having greater flexibility and control over HARPS operations”.

7.21 In the Consultation Paper we outlined the legal requirements to place notices of TROs in the local press, both during consultation and after the order was made. In 2012, the Government proposed to remove these but, following objections from local newspaper groups, they were retained.

- 7.22 Several consultees said that the requirement to advertise TROs in the local press should be abolished. CIHT highlighted the costs involved:

A CIHT survey in 2010 found that Highway Authorities in England alone are estimated to be spending £22.3m per annum on statutory advertising (Nottinghamshire County Council alone spent £156,000).⁶³

- 7.23 The Local Government Association said that reform of “the publication requirements could deliver a system that better consults interested parties in a way that is more accessible at a lower cost”. Oxbotica argued that a quicker and more cost-effective process could be achieved “by using new and more effective technologies and digital platforms”.

Greater standardisation

- 7.24 The third strand was that TROs should be subject to greater standardisation. Buchanan Computing and the Institute of Highway Engineers (IHE) (joint response) asked for a set of standard definitions “that can be used consistently across the country”, including a definition of “HARPS”:

Any inconsistency would hamper the understanding and interpretation of the TRO and make it difficult to introduce HARPS in a consistent and efficient manner. This of course applies also to other definitions used in TROs that relate to public transport, such as the words “authorised vehicles” that are currently used inconsistently by different authorities on bus lane and bus gate signs, causing confusion and enforcement difficulties.

- 7.25 The Faculty of Advocates suggested that:

the Secretary of State or Scottish Ministers may wish to coordinate, monitor or approve TROs made by local authorities which relate to HARPS, at least until it is well established how such services should integrate with the existing road network.

- 7.26 However, consultees also noted the need to balance national and local needs. KPMG LLP stated that “the legislation should be broad enough to provide overall direction for the country while still permitting individual jurisdictions to take into account their own specific requirements”.

- 7.27 CIHT also stressed the importance of local discretion:

CIHT believes that those best placed to make decisions about what their highways should be used for are local communities through their local councillors. National legislation should enable these authorities to be responsive to community concerns in a way that is affordable, quick and effective.

⁶³ For these survey results see *Traffic Regulation Order Advertising: A need to review the regulations* (April 2011) <http://www.ukroadsliaisongroup.org/en/utilities/document-summary.cfm?docid=62D93AE7-0A69-4375-BCE232DFC4E83A65>.

Dedicated lanes

- 7.28 Some consultees argued in favour of using TROs to create dedicated lanes. As Goggo Network said:

HARPS could benefit from dedicated lanes and smart infrastructure that would encourage pooling in larger vehicles that in turn produce superior speed and throughput of non-autonomous vehicles.

- 7.29 However, other consultees argued against measures that would restrict pedestrians or cyclists. Transform Scotland and the Scottish Association for Public Transport (SAPT) commented:

It is important that any changes in traffic regulations for HARPS do not adversely impact other road users, particularly pedestrians and cyclists who already are disadvantaged in most areas by priority given to motorised traffic.

- 7.30 Similarly, the Scottish Trade Union Congress (STUC) said:

It should be a requirement of any licensing system to prove that it will not unfairly disadvantage pedestrians, cyclists and other road users.

- 7.31 London Living Streets and Hackney Living Streets said that dedicated lanes must not “compromise the freedom of pedestrians to move anywhere on the street environment and to cross and walk and on the carriageway at any point”. In this vein, Lewisham Living Streets argued against re-designations that would exclude the pedestrian use of public highways.

- 7.32 Some consultees thought that it was too early to reach a view on these issues. For example, DAC Beachcroft LLP said:

Until such time as it becomes clear what different vehicle types will be capable of HARPS classification, the precise infrastructure that will be needed to support them is unknown.

The importance of TRO Alpha

- 7.33 Several consultees highlighted the TRO Alpha review, which is reviewing the relevant legislation. The Bar Council said:

The on-going review “TRO Alpha” ought to cover any emerging issues, if it is done with some consideration of how legislative changes may impact upon the regulation of HARPS.

- 7.34 Similarly, Transport for London (TfL) argued against pre-empting other reviews:

Given the underway initiative regarding TROs, more specifically the review of relevant legislation (TRO Alpha project) and the creation of a standard TRO digital form (Discovery project), we believe it is best to wait for the findings of these initiatives.

TROs cannot stop oversupply

- 7.35 Finally, the local authority sector pointed out that that TROs could not be used to address problems of oversupply or empty cruising. The Urban Transport Group said:

TROs are simply not designed to be a regulatory tool and would be an extremely cumbersome way of attempting to deal with what could be very nimble and fast moving tactics in the event that a large HARP operator was seeking to flood a market in order to achieve long term market dominance.

- 7.36 Likewise, Transport for Greater Manchester commented:

TROs have historically been a central device for local management of streets, however, they are a reactive and imprecise form of regulation. TROs do not fit the criteria needed to keep pace with commercial and private deployment of HARPS.

BALANCING THE COSTS OF PARKING AND CRUISING

- 7.37 In the Consultation Paper we noted concerns that if the cost of parking is higher than the cost of driving, HARPS might “cruise empty”. In other words, the economic incentives would encourage them to spend idle time between passengers by circulating empty, adding to congestion and pollution.

- 7.38 One possible answer would be to charge HARPS less to park and more to use the roads. We therefore reviewed local authority powers to charge for parking and road use (kerbside pricing and road pricing).

- 7.39 We reached the tentative conclusion that local authorities already have sufficiently flexible powers to set parking charges for HARPS, so as to manage traffic and secure an appropriate balance between different classes of vehicles. However, we welcomed views on possible barriers. We then sought views on the appropriate balance between road pricing and parking charges. Finally we asked if transport authorities should have new statutory powers to establish road pricing schemes specifically for HARPS.

- 7.40 These questions between them generated debate about the risks of empty cruising, the need for road pricing and whether HARPS should be treated differently from other road vehicles.

- 7.41 Many consultees stressed the need to look again at road pricing more generally, to meet the challenges of climate change, air quality and congestion:

AXA consider road pricing to be a really important issue that will require specific attention, not only for HARPS but for all types of vehicles on our roads. [AXA]

Fundamentally, road pricing is part of a much larger conversation about use of and payment for roads and road infrastructure as well as associated policy aspects such as congestion management and air quality management. [Burgess Salmon LLP]

If climate change is to be tackled it is imperative that the whole topic of pricing is considered differently and it may be necessary to implement a coherent national strategy outlining dynamic pricing and charging strategies operating to unified national standards (e.g. ITSO). [TfWM]

- 7.42 However, there was no consensus about whether schemes should be aimed specifically at HARPS. Below we consider the individual questions, to give an indication of the range of views expressed.

PARKING CHARGES

Q30: We welcome views on the possible barriers to adapting existing parking provisions and charges to deal with the introduction of HARPS.

In particular, should section 122 of the Road Traffic Regulation Act 1984 be amended to expressly allow traffic authorities to take account of a wider range of considerations when setting parking charges for HARPS vehicles?

- 7.43 The 52 consultees who responded to this question were split: 18 (33%) argued for greater powers, 15 (29%) thought that the powers were sufficiently wide; and 19 (37%) did not come to a firm view.

Changes in the nature of kerbside access

- 7.44 Several consultees saw the many changes to urban transport as requiring a rethink in how the kerbside is regulated. Five highlighted the large disparity between the high cost of parking for car clubs and visitors in central London, compared to the much lower cost of residents' parking permits. They thought this would change:

We anticipate that greater adoption of connected and automated mobility; broader Mobility-as-a-Service offerings; and changes in consumer habits, will change the current nature and patterns of demand for kerbside access including long-stay parking, short-stay parking, and pick-up and drop-off.... We expect local authorities' parking strategies to develop accordingly, leading to an organic redesignation of resident's parking spaces to balance the interests of different stakeholders and modes including HARPS, cycling, micromobility and freight. As a result we anticipate more granularity and variety of charging when it comes to parking provisions, using the permitted purposes.

- 7.45 Heather Bradshaw-Martin (Humanity in Motion) pointed to the "newly understood value of the kerbside", which may require revision of the relevant legislation to recognise that kerbside access may be more valuable than parking.

- 7.46 Several consultees saw kerbside regulation as a useful tool to encourage use of public transport. For example, Pinsent Masons LLP suggested:

If the same vehicle was parked within the same number of miles radius during peak hours throughout week for a significant proportion of time, they could be charged increasingly more.... Such a regime might dissuade people from travelling with their own cars all the time and might encourage them to use taxis/public transport instead.

- 7.47 On the other hand, consultees were divided over how HARPS would fit into the renewed competition for kerbside space.

Cruising

- 7.48 First, consultees were split on how far the need to avoiding empty cruising should affect parking charges. Some saw empty cruising as a central consideration. TfL was of the

view that “empty running or cruising will be one of the main risks of HARPS deployment in the future”. Similarly, TfWM advocated for “adequate consideration of the risks that empty running may have on congestion and parking”.

- 7.49 The Royal Society for the Prevention of Accidents (RoSPA) argued that the cost of using the road should be higher than the cost of parking to discourage empty cruising put it:

One answer to the problem of empty cruising would be to charge more for cruising than parking. This would involve a major change in current practice, as far more money is currently collected from parking charges than from road pricing.

- 7.50 Other respondents made similar comments:

It should be possible to consider a road user charge where a vehicle is travelling empty. This would discourage unnecessary travel and make it more financially beneficial to remain parked until the vehicle is in use carrying passengers. [Dean Hatton (National Police Chiefs Council)]

BPA asks you to consider that there is a need to make sure that it is more cost-effective for a HARPS to wait for a passenger/hire than it is for it to cruise empty. The operating costs will arguably be the same everywhere, whereas parking charges will vary locally. [BPA]

- 7.51 On the other hand, the Urban Transport Group thought that kerbside pricing was the wrong tool to avoid cruising:

We do not agree that the answer to empty cruising is to charge HARPS less for parking than for using the road. This potentially creates a different problem with streets remaining cluttered with parked vehicles. It may also disincentivise efficient use of vehicles as there will be less reason for vehicles to carry on to another pick-up/job having dropped off its passengers or load.

- 7.52 Finally, the Society of Motor Manufacturers and Traders (SMMT) saw no need for regulation to prevent HARPS from cruising, since operators will be under commercial incentives to avoid cruising in any event:

Whether it is HARPS, a taxi or a private hire service, it is a commercial imperative for operators to match available vehicles to the nearest customer as frequently as possible. Where HARPS are offered using electric vehicles, empty cruising serves only to drain the battery more quickly and reduces the available range for carrying passengers. The optimisation algorithms on the operator’s platform will therefore ensure empty cruising is minimised, as empty cruising effectively means increased inefficiency and lost business.

Should HARPS be given preferential access to parking?

- 7.53 Opinions were divided on whether HARPS should pay less for parking than other vehicles. Intel Corporation (and Mobileye, an Intel Corporation company) argued that HARPS should pay less:

HARPS vehicles can bring a real added value for urban mobility. During the first phase of its deployment, incentives should be put in place in order to facilitate their acceptance. This should include a favourable treatment when it comes to parking charges in order to guarantee that HARPS remain viable in the first stages of their development.

- 7.54 The Mobility and Access Committee for Scotland (MACS) advocated “less expensive parking charges” for HARPS, because of their lower emissions. CIHT thought that traffic authorities should have powers specific to HARPS because they operated differently:

CIHT believes that traffic authorities should have the ability to specify parking charges specifically for HARPS vehicles as these will operate in a different way to other vehicles and in order for traffic authorities to manage their unique transport networks best this will be an important lever

- 7.55 On the other hand, several consultees thought that parking charges should be “equitable for all cars” (P. Whitfield Consulting). On a similar note, other consultees said:

The starting point should be that outcomes should be the same whether for HARPS or conventional vehicles, and that the legislation should be amended if necessary to ensure this. The objective should not be to facilitate HARPS vehicles per se. [Transform Scotland]

The same rules must apply irrespective of whether vehicles are driven or autonomous. The principle should be in favour of modal shift towards public transport in each case. [UK Bus Division FirstGroup plc (FirstGroup plc)]

- 7.56 Some consultees were sceptical of providing priority kerbside access for HARPS. Richard Sarginson opposed the perceived “wish to use the advent of HARPS to assist in social engineering of our society”. Similarly, John Rainbird queried whether HARPS would provide the envisaged benefits.

A need to amend the legislation?

- 7.57 Some consultees argued for amending the Road Traffic Regulation Act 1984 to allow for sufficient flexibility to set appropriate parking charges for HARPS. TfL advocated amendment, but warned that “at this stage it is difficult to specify which tools will be more effective in controlling congestion and discouraging empty cruising of HARPS in the future”. Oxbotica argued that:

Local traffic authorities should have enough power to make provisions based on wider considerations and adapt parking charges to account for HARPS and their impact on the traffic density and usage of parking spaces. The amendment of section 122 of the Road Traffic Regulation Act 1984 seems a reasonable option to empower Local Authorities and allow a higher level of flexibility.

- 7.58 The UK Computing Research Committee (UKCRC) argued for a consultative approach to setting parking charges:

Yes, it seems essential to enable local authorities to respond to emerging problems in a flexible manner but working with the HARPS operators and the wider public.... The complexity of these new operating models creates an opportunity to develop more

consultative mechanisms that address some of the perceived limitations in existing practices.

- 7.59 The Faculty of Advocates suggested that the legislation should distinguish between HARPS used as mass transit, compared to HARPS used privately:

consideration should be given to distinguishing, even in this Act, between HARPS operators providing a service which is a genuinely public offering in terms of availability and price (along the lines of a public mass transit system) and those providing an exclusive service more akin to taxi or private hire car. Making this distinction explicit may enable and encourage traffic authorities to appropriately privilege public use over private use in transport planning and parking provision.

The legislation is already sufficiently wide

- 7.60 Several consultees argued that the legislation did not need to be changed. They said that the powers were already sufficiently wide to set differential prices for HARPS, so as to manage traffic. As the Bar Council put it:

It appears that the current legislation is sufficiently broad to allow for existing parking provisions to be adapted to deal with the introduction of HARPS. It is not clear what further considerations would need to be added to section 122 of the Road Traffic Regulation Act 1984 to allow for appropriate adaptation, as presumably the goal of such adaptation would be to manage the “expeditious, convenient and safe” movement of traffic and pedestrians.

- 7.61 Likewise, Buchanan Computing and IHE thought that current legislation contains appropriate considerations:

We believe it has become accepted that, in order to meet the legally acceptable objective of achieving a turnover in space usage and ensuring availability, charges need to be set at a sufficient level to achieve this. We therefore see no barriers in current legislation in this regard.

- 7.62 RoSPA agreed with the objective of changing current practice, but thought that the powers already existed:

We believe that the existing legislation provides flexible powers to introduce the required changes, such as charging less for HARPS than for residents’ parking, or increasing charges for privately-owned vehicles to encourage more shared use.

Uncertainty

- 7.63 Some consultees warned against amending legislation before the effects of HARPS are known and evidenced. Burges Salmon LLP stated:

At this point in time, it appears to us that there is insufficient data to understand fully how HARPS operations are likely to utilise kerbside in their operations. Consequently, we do not see any necessity at this stage to amend existing legislation (which the Law Commissions correctly note are already quite flexible).

- 7.64 Similarly, HORIBA MIRA stressed how unpredictable the changes would be:

HARPS may be used in ways that are currently unexpected and may present unforeseen challenges regarding road and parking prices, making more prescriptive regulations impractical.

ROAD PRICING AND PARKING

Q31: We seek views on the appropriate balance between road pricing and parking charges to ensure the successful deployment of HARPS.

7.65 Forty-nine consultees gave views on this issue. Many consultees thought that the balance would vary locally and require flexibility. Consultees were split as to whether these measures should seek to prevent empty cruising, and whether HARPS vehicles should be treated differently from other vehicles. Some consultees proposed factors which should be taken into account in determining the right balance. Other consultees thought this question premature, given the uncertainty surrounding HARPS deployment.

Flexible tools at a local level

7.66 Many consultees stressed that decisions would need to be made flexibly, at a local level. Local authorities would therefore need a range of tools to respond to local concerns.

7.67 For example, Reed Mobility said that the balance would depend on the features of the environment in which HARPS are deployed:

However, city / region / transport authorities should have the regulatory tools available to them to be able to implement road pricing and parking charges for the purposes of traffic management.

7.68 Similarly, UKCRC highlighted the need for local solutions:

As noted in the consultation, there are significant opportunities to use new technologies to implement flexible, local solutions to this balance. However, ... the application of these approaches must be built on mechanisms that ensure transparency and, as far as is possible, achieve local consensus.

7.69 ITS United Kingdom (ITS UK) commented that “there needs to be one national scheme overall (for information, payment etc) but local implementation for level setting”.

7.70 TfL took a balanced approach, viewing road pricing as a useful tool if exercised cautiously:

While road pricing could help control congestion that HARPS may cause in town centres in the future, the aim should be to influence the way they will be used and not to prevent them. It is important that an appropriate balance between road pricing and parking charges is achieved to ensure successful deployment of HARPS, considering that often these two different approaches are associated with conflicting interests. We believe, however, that it is very early to define at the current stage what would constitute an appropriate balance.

- 7.71 TfWM also thought that the appropriate balance should be struck by local authorities, though it could be subject to a national scheme to combat climate change:

It is likely that the appropriate balance will be determined on a local basis to account for local circumstances and usage of HARPS vehicles. The use of road pricing and parking charges as the mechanism for ensuring the successful deployment of HARPS does imply that certain benefits of HARPS vehicles may not be realised however, i.e. reclaiming car parking spaces for other purposes, or decreasing on-road congestion. HARPS may improve one, but worsen another...

- 7.72 By contrast, SMMT warned that localisation might create inconsistency:

Road pricing and parking charges are the prerogative of local authorities. The lack of uniformity, however, may inadvertently create certain local markets that are more economically attractive for HARPS deployment than others.

Alternative ways to prevent empty cruising

- 7.73 In its response HORIBA MIRA thought that the vehicles themselves could be engineered to prevent cruising:

Road pricing is not the only way to prevent vehicles from cruising whilst empty, and care should be taken to avoid artificially distorting the market in order to prevent this behaviour when it could be controlled by regulations on the vehicles themselves, preventing them from driving other than to achieve a particular transport objective. It would be expected that HARPS are engineered to be restricted to the speed limit... so there's no reason that other antisocial behaviours, such as clogging up roads whilst cruising to avoid parking costs, shouldn't also be directly prohibited.

- 7.74 DAC Beachcroft LLP suggested other forms of regulation:

An even more effective means of controlling it is to require empty HARPS that are not travelling to pick up their next passengers to park at nearby carparks or HARPS depots, both of which could provide charging points.

Road pricing should apply to all vehicles

- 7.75 As we have seen, several consultees thought that any discussion of road pricing should be part of a broader conversation relating to all road vehicles. SMMT was particularly concerned that any scheme of road pricing and parking charges which was specific to HARPS would remove the benefits of HARPS:

In order to persuade people to leave their private cars behind, HARPS must be both convenient and affordable. If the combined effect of road pricing and parking charges is unattractive HARPS fares, it should not surprise local authorities if some people eventually resort to driving their private cars.

- 7.76 By contrast, some consultees opposed the premise of the question, arguing that HARPS should not be facilitated. Transform Scotland and SAPT thought that “the purpose [of road pricing] should be about overall public benefit, not ‘successful deployment’ of a particular mode.” AID GmbH was also concerned that road pricing

schemes specific to HARPS would reduce their competitiveness if the charges were passed onto passengers through higher fares.

Factors to consider

- 7.77 Consultees proposed factors which local authorities should take into consideration when determining the appropriate balance between road pricing and parking charges. Oxbotica suggested that:

For HARPS to be deployed successfully, any road pricing scheme should take into consideration the usage of the vehicle, number of passengers that are using the vehicle simultaneously and their impact on traffic density, i.e. number of vehicles/hours/mile, time of the day..., number of users that adopted this type of transport instead of conventional non-automated passenger cars.

- 7.78 Sustrans looked at features of the vehicle:

I am not clear what the right formula is, but it certainly depends on some of the parameters of operation, such as fuel type and efficiency (extent of damage in terms of air quality and carbon emissions), other environmental damage (e.g. noise, visual intrusiveness), and amount of space required (e.g. for parking, charging, loading, etc).

- 7.79 Kennedys Law LLP focussed on reducing emissions:

The balance is difficult to achieve, whether in respect of parking or road pricing. This is, however, an opportunity to promote energy efficient and non-polluting vehicles.... Exemptions for non-polluting vehicles are more likely to encourage take up, and less likely to lead to opposition.

- 7.80 STUC also highlighted their concern that the introduction of HARPS could be incompatible with the government's climate change obligations, if automated vehicles produce carbon emissions.

- 7.81 Richard Morris (Innovate UK) warned that road pricing may prove to be unpopular:

Most motor vehicle users pay a road fund licence fee (road tax). This is perceived as a payment which allows the user to use the public road. If excess congestion occurs, this is often perceived as a failure of the authority to invest that road fund licence fee correctly and effectively in suitable road infrastructure. For the user to be punished for the apparent incompetence of the authority by being forced to pay an additional fee to have access to a traffic jam adds further insult and is not a move likely to encourage political respect or patronage. It is not surprising that many proposed schemes have failed, or that mayors do not want to undermine their positions by supporting road pricing schemes.

Unless road pricing is clearly linked with improvements in other forms of alternative transport, it will always be seen as an unwanted tax.

- 7.82 As we explain below, in Consultation Paper 2 we commented that road pricing for HARPS may not stir the same resentments as they were a new service, subject to different incentives.

Uncertainty

- 7.83 Some consultees were against determining a balance before the effects of HARPS are known. Gemserv Limited thought that “it is premature to form a view on this until there is more clarity as to how HARPS will function for real”. KPMG LLP thought that studies need to be carried out prior to any decisions on charging:

While it is critical to see these two interventions in conjunction, it is likely that there is currently insufficient data and experimentation in a UK context to answer this question. You or the Centre for Connected and Autonomous Vehicles should consider conducting a detailed economic and spatial assessment in the UK context of the likely effect of autonomous vehicle adoption on road use and congestion.

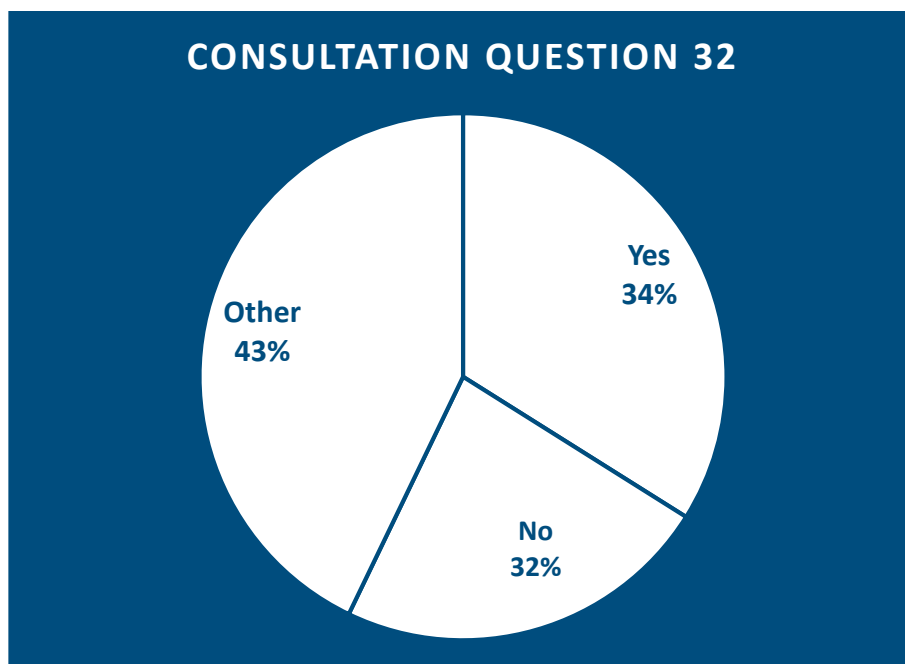
NEW POWERS ON ROAD PRICING FOR HARPS

Q32: Should transport authorities have new statutory powers to establish road pricing schemes specifically for HARPS?

If so, we welcome views on:

- (1) the procedure for establishing such schemes;**
- (2) the permitted purposes of such schemes; and**
- (3) what limits should be placed on how the funds are used.**

- 7.84 In our Consultation Paper, we suggested that local authorities might consider introducing road pricing schemes specifically for HARPS to control congestion in town centres. Automated technology would enable a flexible approach, with a charge per mile travelled and different rates depending on the road, occupancy and time of day. We noted public opposition to some road pricing schemes. However, HARPS have the potential to lead the way, partly because they are a new service and partly because they generate the data to allow schemes to be administratively simple. The purpose would not be to disadvantage HARPS, or to subject them to a greater overall level of tax and charges, but to collect those charges in a way that managed congestion and discouraged unnecessary cruising.
- 7.85 We asked if there should be new powers to establish road pricing schemes specifically for HARPS. We thought that local authorities should set their own charges but would benefit from a “back office” national collection scheme to keep costs low.
- 7.86 Of the 54 consultees who responded to this question, 19 (34%) supported new statutory powers to establish HARPS road pricing schemes, and 13 (32%) opposed such powers. 22 consultees (43%) responded “other”, primarily on the basis that new road pricing schemes should be established for all vehicles.
- 7.87 Consultees who agreed with HARPS-specific schemes thought they should be made in similar ways to existing congestion charges, for specified purposes, and that collected funds should be used in specified ways.



Arguments for new statutory powers

7.88 Consultees supporting new statutory powers did so because it would “reduce costs and complexity” (Oxbotica). The Bar Council said:

Although implemented locally, it would be sensible to develop a national framework to reduce administrative costs and create a simpler, uniform approach.

7.89 WMG, University of Warwick also agreed but argued for an overhaul of the road pricing system:

The current method of road-pricing places too little incremental cost on single occupancy personal car use and will not recover falling fuel duty revenues, hence an overhaul of the way we pay for use of the roads is urgently needed. This then provides opportunities for different strategies and incentives for public transport.

7.90 Bosch highlighted the potential flexibility of such schemes:

Road pricing could potentially be dynamic for each route and time of day, and take into account whether the HARPS is in competition with more environmentally friendly transportation modes.

Arguments against new statutory powers

7.91 Consultees opposed to new statutory powers were concerned that differential road pricing could disadvantage HARPS and become a barrier to their widespread use. Five thought such statutory powers would deprive HARPS of “a level playing field”.

7.92 Intel Corporation (and Mobileye, an Intel Corporation company) said that such a scheme would bring limited benefits:

Any special road pricing scheme for HARPS would not bring significant level of revenues to the public authorities. At the same time, it would also take the risk to harm new services in the first stage of their development.

7.93 Some consultees did not see any basis for treating HARPS differently from other vehicles. ITS UK saw HARPS as “but one class of vehicle”, and suggested a “smart road pricing system” which “should apply to all vehicles and allow for different charges by type of vehicle, use, time of day road etc.” FirstGroup plc thought that “the same rules should apply whether the vehicles are driven or autonomous”, and that road pricing might undermine “the Government’s drive to increase use of public transport”.

7.94 HORIBA MIRA said:

Distorting the market to prevent cruising empty is not a justification for differential pricing, as such behaviours should be prohibited by regulations placed upon manufacturers and/ or operators, rather than attempting to 'persuade' the vehicle to make the desired decision.

7.95 The Freight Transport Association (FTA) opposed unduly burdening vehicles with additional charges, as the “government already taxes road users through Vehicle Duty and VAT on fuel”. However, the FTA thought that a more fundamental review of road funding may be timely:

Perhaps it is time to review the whole funding arrangement to ensure that revenue for government will pay for the infrastructure needed for the future as well as encouraging more effective and environmentally friendly choice for users.

7.96 Buchanan Computing and IHE thought that existing statutory powers could enable authorities to make specific provision for HARPS, providing that a statutory definition of HARPS is enacted.

Procedure for establishing a scheme

7.97 Consultees who supported new statutory powers for HARPS road pricing thought that that the procedure for establishing schemes should follow those used for existing congestion charging. The Association of Local Bus Managers (ALBUM) thought that schemes such as London’s congestion charge and Nottingham’s workplace parking charge “have established the principles” for procedure. BPA advocated adapting the Transport Act 2000 to include HARPS.

7.98 Reed Mobility stated:

The procedure for establishing such schemes should build on the existing procedures that led to the introduction of congestion charging in London, including extensive consultation with residents and businesses affected and with clarity over the intended outcomes and key metrics that will be used to assess the effectiveness of the schemes (and mechanisms for withdrawal if the scheme does not prove to have the desired effect or if there are unintended adverse consequences).

Permitted purposes

7.99 Consultees listed several permitted purposes for which a local authority should exercise its statutory powers to set road pricing, primarily: improving air quality;⁶⁴ congestion relief;⁶⁵ and preventing empty cruising.⁶⁶ Additional purposes included “citizen wellbeing” and “regeneration” (ALBUM); encouraging “transport provision for underserved communities” and managing “road access for certain classes of vehicle” (Reed Mobility); and encouraging or discouraging passenger travel at particular periods of the day (John Rainbird).

7.100 The International Underwriting Association of London believed that a new road pricing scheme “should reflect the positive impact HARPS are likely to have on congestion on the roads, public safety and the wider environment”. Likewise, Goggo Network thought that “the objective of such schemes is rewarding operators that are actively helping reduce CO2 emission and decongesting the city”. By contrast, Sustrans argued that road charges should “reflect the costs of damage inflicted”.

Limits

7.101 Most consultees who supported new statutory powers agreed that limits should be placed on the use of funds raised through such schemes. They thought that any funds should be ringfenced, and used only for objectives such as existing Special Parking Account purposes,⁶⁷ sustainability,⁶⁸ easing congestion and improving air quality,⁶⁹ and wider public transport objectives.⁷⁰ Sustrans said that “use of funds should be concentrated in the areas where damage is incurred”.

7.102 Some consultees argued for using the funds raised for HARPS-specific purposes. Goggo Network thought that funds “should be allocated to the improvement and upgrade of the infrastructure used for the operations of these vehicles”. John Rainbird suggested a dual use of funds, to foster the development of HARPS or “to compensate other parties for losses or inconvenience due to HARPS”.

7.103 Oxbotica suggested establishing “guidelines (rather than restrictions) on how the funds should be spent”:

A test criteria could be defined to demonstrate that the expenses will generate a tangible improvement on transport and mobility for the local area.

⁶⁴ Stevenage Borough Council, Reed Mobility and the Bar Council.

⁶⁵ Stevenage Borough Council, ALBUM, Heather Bradshaw-Martin (Humanity in Motion), Reed Mobility, the Bar Council and Sustrans.

⁶⁶ The Bar Council, John Rainbird, Richard Morris.

⁶⁷ Stevenage Borough Council.

⁶⁸ Reed Mobility.

⁶⁹ The Bar Council.

⁷⁰ ALBUM, Maple Consulting Ltd, BPA and TfL.

General overhaul of road pricing

7.104 The majority of consultees who responded “other” thought that road pricing requires a general reconsideration in relation to all types of vehicles, not just HARPS. For example, the RAC Foundation said that the issue:

needs to be taken forward in the context of a wider debate about motoring taxation as the Treasury’s income from fuel duty declines. Highway authorities already have considerable powers to place restrictions and impose charges on vehicle movements to achieve environmental and traffic outcomes.

7.105 Uber supported road pricing schemes in general, but argued that such schemes are less effective where they target only specific types of vehicles:

the impact on congestion would typically be less effective where a regulatory approach targets only a particular type of transportation option. This is especially the case with a focus on HARPS and AVs given they present only a small sliver of the total vehicle mix in any given area. Imposing fees specifically and exclusively on HARPS and AVs would likely yield only a minimal impact on congestion, while shifting passenger demand away from HARPS and towards personal vehicle use.

7.106 The Urban Transport Group also thought that a HARPS-specific road pricing scheme would create perverse incentives and be insufficient to prevent empty cruising:

Transport authorities should have the flexibility to establish road pricing schemes for HARPS or for any other category of vehicle and to design schemes that fit with the goals and priorities set for their places. Establishing road pricing schemes for HARPS alone may be counter-productive as it could incentivise other, potentially less efficient forms of transport, like individual private car use.

7.107 Transform Scotland and SAPT thought that the considerations for HARPS in this area are the same as for other electric vehicles:

There is a good case for road charging to be introduced on electric vehicles as a replacement for fuel tax on petrol and diesel vehicles. Road charging revenue could be justified to the public if used to fund road maintenance and construction, compensating for the loss of fuel duty. However, there is no reason to treat HARPS differently from other electrically powered buses.

7.108 The Faculty of Advocates did not see any relevant difference between HARPS and other vehicles which would justify a differential road pricing approach:

We query the premise of the question, which is that automated vehicles offer ‘a much more flexible approach to road pricing’ notably because their distance travelled, time of travel, and occupancy can be measured. It is not self-evident to us why this information should not be available (already or with attainable modification) from buses.

QUANTITY RESTRICTIONS

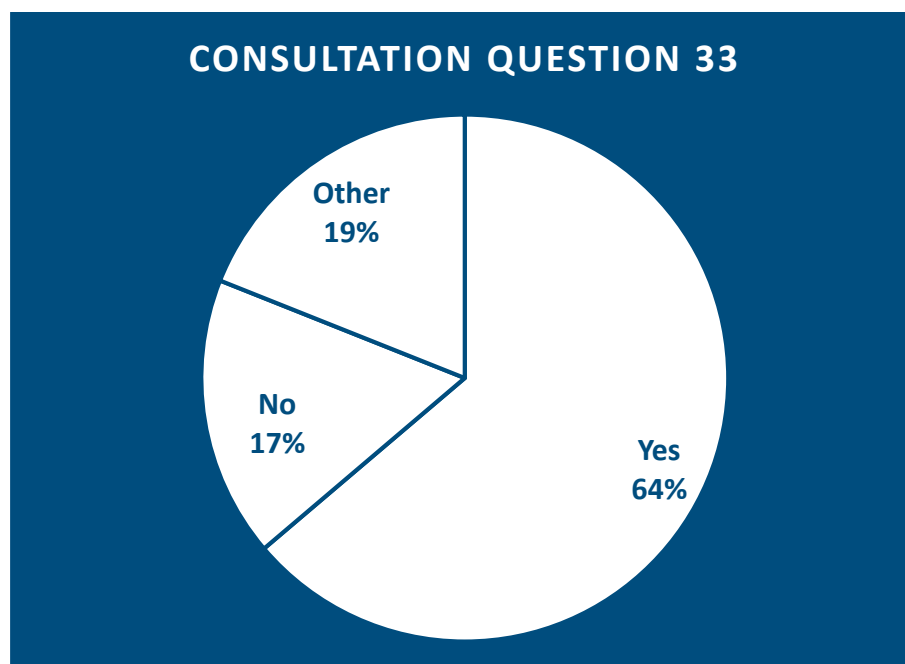
Q33: Do you agree that the agency that licenses HARPS operators should have flexible powers to limit the number of vehicles any given operator can use within a given operational design domain for an initial period?

If so, how long should the period be?

7.109 In our Consultation Paper, we provisionally proposed a phased approach to HARPS deployment. Initially, the regulator would allow HARPS operators to deploy only a limited number of vehicles in a given area. The number would increase once the operator had shown that they could manage safety without disrupting traffic flow.

7.110 Of the 57 consultees who engaged with this question, 37 (64%) agreed that the licencing agency should have powers to limit the number of vehicles a HARPS operator could use during an initial period. Ten (17%) disagreed, and 11 (19%) did not come to a firm view.

7.111 The majority of consultees thought that a phased approach would bring a number of benefits, including a competitive market and safety assurance. However, there was no consensus as to the length of the initial period, and suggestions varied widely. Consultees opposed to quantity restrictions were concerned that innovation would be stifled and that a free and open market would be restricted. Several consultees thought that the uncertainty surrounding HARPS introduction made the question premature.



Arguments for initial restrictions on numbers

7.112 Consultees provided three main arguments for a phased approach: to improve safety; competition; and traffic management.

Safety

7.113 Many consultees agreed that a phased approach would aid safety monitoring in the early stages of HARPS deployment. As RoSPA explained:

At first, manufacturers would provide regulators with evidence from their own trials, gained from track-based tests, virtual testing and road-trials with safety drivers. On this basis, the regulator would allow a small number of vehicles to be deployed commercially, on the condition that the deployment was used to gather data. Once safety had been demonstrated, the number of vehicles would be increased. This approach would maximise safety and minimise risk.

7.114 Similarly, the Parliamentary Advisory Counsel for Transport Safety said:

Manufacturers will have conducted their own tests and trials which they will use to build a case for commercial deployment. Regulators may then allow a small number of vehicles to operate commercially on the basis that their deployment was used to gather additional data. Once safety has been demonstrated, regulators would likely then use their powers to increase the number of HARPS that are able to operate commercially.

This approach requires the relevant regulator to have flexible powers to limit the number of vehicles any given operator can use within a given operational design domain. The regulator should also be allowed to limit the number of licences to avoid congestion and other undesirable impacts on transport policy, other road users, residents and businesses.

7.115 Other consultees put forward similar arguments. For example, Aviva said:

the number of vehicles should be limited to ensure operational design domains remain fit for purpose and not compromised by over population of HARPS and other road users, with road/VRU safety being maintained at the highest possible level. Operator competency and safety must be managed to protect riders.

Competition

7.116 Consultees also thought that initial restrictions could help competition, as it would stop the first mover from gaining a dominant position. TfL thought that an initial limit on vehicle numbers would allow more entrants into the market, but warned that such a power must be “managed appropriately to ensure it does not limit the users’ options, push the costs up or negatively affect operators”.

7.117 Similarly, TfWM thought that in addition to safety benefits:

limiting the number of vehicles any given operator can use within a given operational design domain may also help ensure adequate competition is available, and to stop a dominant operator gaining a monopoly of an area, or areas.

7.118 However, TfWM warned that such limits could be arbitrary and based on inadequate evidence:

A level of flexibility and agility may be necessary so we can adapt to the data as we obtain it.

7.119 The FTA also gave cautious support:

In principle FTA would support such a move, providing it does not create and monopoly situations, or lead to substantial variation in volumes which fail to meet the user's needs. Perhaps licences should be conditional to the service offering – akin to subsidised bus routes. Government should learn lessons from the de-regulation of the bus industry, which led to a vast increase in the numbers buses competing for a fixed number of passengers. A review of the necessity to increase volumes should be undertaken annually, until such a time where stability is sustained.

7.120 Richard Sarginson thought that the agency should ensure a diversity of operators:

I believe that the Agency should have a legal duty to ensure, if at all possible, that there is a diversity of suppliers. Actions, by the Agency that do not support diversity should be challengeable and reversible.

Traffic management

7.121 The third main argument made in favour of initial restrictions on numbers was that they would help manage traffic. For example, CIHT drew attention to “other imperatives than safety” which need to be managed through phased deployment:

Transport modes and especially automotive vehicle transport can have many costs to society if not managed correctly such as air pollution and health, safety, congestion and others.

7.122 FirstGroup plc and Kennedys Law LLP thought that quantity restriction could avoid congestion. Similarly, Stagecoach Bus Group, Community Passenger Transport and Transform Scotland thought it important not to overwhelm the infrastructure.

7.123 Pinsent Masons LLP agreed that “we do not create a 'wild west' of HARPS vehicles flooding the road network”. They supported initial controls so long as they did not continue in the long-term.

Arguments against an initial phased introduction

7.124 Consultees who disagreed with our proposal thought that any limits would be arbitrary, and could be used to stifle competition. For example, Oxbotica argued that:

It would be difficult for the licensing agencies to get the balance right, and ensure fair competition to different operators, vehicle manufacturers, ADSE and other providers so all have the same level of access and can benefit from deploying their technology and services on public domain.

7.125 Consultees in this group thought that numbers would be controlled by supply and demand. BPA argued that “the market forces will prevail in determining the quantity of HARPS”. AID GmbH offered a similar opinion:

We think that the demand and supply of the HARPS technology paired with the provided service will ultimately limit the number of vehicles in a given ODD. Providing and safely operating a HARPS service presumes a certain investment that operators will need to make. Limiting the number of vehicles upfront could deter potential

operators to enter that specific ODD if they see their business case not fulfilling and so would prevent these operators offering their otherwise suitable services in that specific ODD.

7.126 Wayve saw some merit in a statutory power, but thought that the market was best placed to match supply to demand:

There is a significant commercial incentive as transport fleet operator to have the minimum vehicles on-road needed to satisfy demand. Similarly, an autonomous fleet used in passenger services will inherently have precise demand figures and be able to respond quickly to these. This is different to the current incentives for taxis and ride-hailing services, given these vehicles tend to be independently operated.

7.127 The Faculty of Advocates queried whether initial limits were needed to ensure safety, on the basis that vehicles should not “be allowed to operate at all unless they are able so to satisfy the agency” that they are safe:

We therefore doubt the need for, or utility of, such a power.

7.128 Several consultees thought that the uncertainty surrounding HARPS introduction made the issue premature. MACS termed this “a bit of a crystal ball question”. Similarly, KPMG LLP said:

While providing a free rein to manufacturers might result in them ‘dumping’ their products in the market to stymie competition, specifying the powers of the agency to regulate quantity at this stage may be premature. The experiences of other countries in which there has been greater adoption—for instance, Singapore—does not yet suggest that monopoly regulation of this nature is required.

7.129 Even consultees who agreed with the proposal expressed some concerns. Burges Salmon LLP said that restrictions on numbers are “significant interferences in the market and must therefore be justified objectively and on a reasoned and transparent basis”. Transform Scotland agreed with our proposal, but added:

We would also be concerned that such flexible powers may enable the agency to protect other HARPS or conventional operators at their discretion.

Limits by operational design domain?

7.130 Several consultees suggested that it was “arbitrary” or “impractical” to limit numbers by operational design domain (ODD). As Five said:

Limiting by ODD seems arbitrary unless the limits are banded in some way.... A handful of vehicles operating in a ‘high risk’ ODD vs the same number operating in a ‘low risk’ ODD are not going to be equivalent

7.131 SMMT thought that regulators might have insufficient knowledge to determine the right number of vehicles in a given ODD:

We agree with this in principle on the grounds of safety and on the basis that this is not quantity restrictions which place a cap on the number of vehicles available to all operators following full deployment...

However, we question how the agency might be sufficiently knowledgeable of local areas to determine the right number of vehicles permitted under a given operational design domain (ODD). ODD is a developer- or vehicle manufacturer-defined terminology, and must not be confused with geographic areas.

7.132 A joint response from the ABI and Thatcham saw “merit in limiting the number of vehicles to enable the operator to demonstrate that the vehicles can be used safely within a particular design domain”. They noted however, that:

A distinction may need to be drawn between those vehicles that operate on the public road amongst other traffic and those that operate in a defined and confined area. As these factors will vary greatly between individual cases, we would expect the regulatory authority to have sufficient flexibility to decide whether to limit the number of vehicles as well as the period in question.

How long should the period be?

7.133 There was little agreement as to the appropriate length of the initial quantity restriction period. Suggestions ranged from six months to 20 years, or to no pre-determined limit at all. Consultees in favour of a shorter period focused on the immediate safety of HARPS, whereas consultees arguing for longer-term monitoring cited competition concerns. Those who opposed a rigid time limit thought there is too much uncertainty to set a specific period at present.

7.134 On one end of the scale, some consultees thought that the initial period should focus on monitoring the initial effects in the first months of HARPS introduction. The Mid and West Berkshire Local Access Forum suggested six months. Tim Marlow Ltd also thought a short period would be sufficient to ensure safety:

The key is to ensure the HARPS vehicles have undergone sufficiently rigorous testing in simulation, within designated test facilities and in real-world trials to enable them to be properly approved as safe to operate. Any restriction in numbers is likely to only be required for a matter of months unless problems are observed.

7.135 Richard Morris (Innovate UK) thought that the minimum period should be six to 12 months, “but should continue until the HARPS operator has provided sufficient evidence of suitably safe and appropriate service operations”.

7.136 ALBUM thought that 18 months would be sufficient to collect data:

There should be a pre-defined measure of “success” at the end of any trial period. Given the measure of success with local bus services we believe the initial period should be 18 months with 6 monthly reviews to quantify “success” in that period.

7.137 Some consultees suggested one year, as “a realistic period to assess the impact on traffic and safety” (Transform Scotland and SAPT), as this would “allow experience with all four seasons” (ITS UK).

7.138 HORIBA MIRA said that it depended on the level of safety expected, the number of vehicles involved and how intensively they were used, so it was only possible point to provide a “gut feeling figure”. However, “somewhere in the region of 2 or 3 years sounds reasonable”:

It should be possible to extend the limitation period if concerns remain, whether relating to safety or the overall effect on the transport network (e.g. overly cautious vehicles slowing down other road users).

7.139 On the other end of the scale, some consultees thought constant monitoring over a longer period is required to ensure effective competition. Richard Sarginson stated:

I would suggest that the period should be a minimum of 10 - 15 years. I am not saying that an operator has to be limited to the number in his initial proposal for that whole period. It can be increased by the Agency if they believe there is an under-supply of transport. However, there needs to be a significant period to allow other operators in an area to enter the marketplace.

7.140 Similarly, Heather Bradshaw-Martin thought that if the aim was to allow other operators to enter the field it might take 20 years.

7.141 Some consultees thought that the period should be subject to extension. The Bar Council thought that “it should be possible to extend it given that it is not known how long it will be before full deployment would be appropriate”. TfL argued for extension by local authority discretion:

Once the technology is fully proven and sufficient data is gathered, it should be in the discretion of the local authorities to decide whether the limit should remain or be relaxed to enable further deployment of HARPS vehicles.

7.142 A few consultees opposed imposing a pre-determined time limit altogether. The RAC Foundation thought that “the presumption might best be for an ongoing restriction of varying volume, rather than a simple time-limited restriction”. Kennedys Law LLP suggested that:

It is not appropriate to set a time limit for this initial period as the level of vehicle congestion will need to be monitored. Regulation can be made for the agency to review at the end of a specific period.

7.143 Similarly, the British Vehicle Rental and Leasing Association said that “imposing a set limitation without having factual evidence could be arbitrary and not in the public’s interest”.

Other limitations

7.144 Some consultees thought that the agency should be able to regulate deployments in other ways, rather than simply by vehicle numbers. HORIBA MIRA stated:

Other limitations should be considered beyond the number of vehicles; for example, it would be worth considering restricting the operational design domain by prohibiting use during rush hour, at night, in the fast lane of a dual carriageway etc.

7.145 Bosch also thought other considerations took precedence over vehicle numbers:

We do not believe that an agency setting the number of vehicles is the right lever. There should be regulations around other metrics, such as empty miles travelled, average wait times for customers, contribution of HARPS to traffic jams.

7.146 Goggo Network thought that the power should not be vested solely in the agency licensing HARPS operators. Instead:

The number of vehicles should be established as an agreement between the agency, the local authorities and the approved licensees, in order to create a fair economic environment and ensure equitable coverage of the service area.

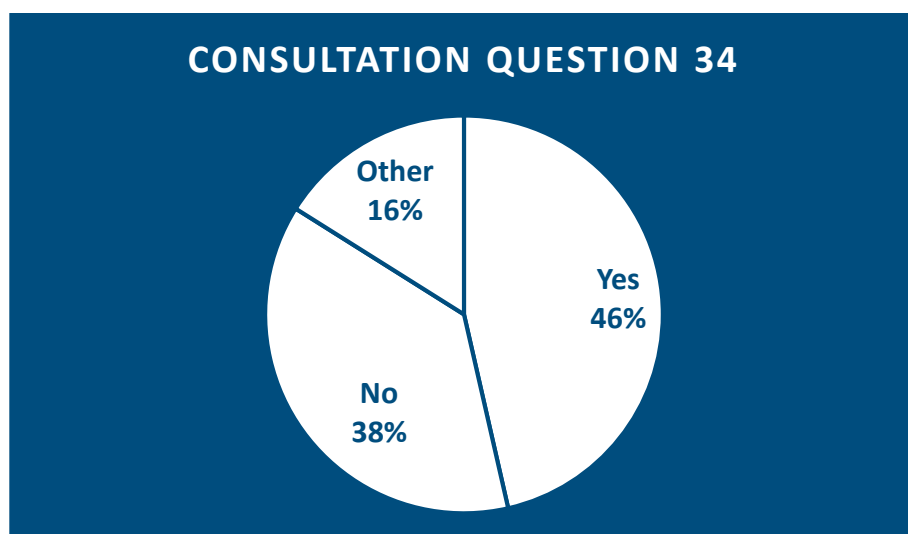
“AFTER THE EVENT” CAPS

Q34: Do you agree that there should be no powers to impose quantity restrictions on the total number of HARPS operating in a given area?

7.147 In our Consultation Paper, we drew attention to the long history of attempts to impose restrictions on the number of vehicles licensed for hire.⁷¹ In England and Wales (outside London) licensing authorities still have power to limit taxi licenses in their area, but not private hire vehicles. In Scotland, local authorities may limit the number of both taxis and private hire cars.

7.148 For conventional vehicles, quantity restrictions are controversial. They have been widely used to prevent the oversupply of taxis and to control the congestion caused by taxi cruising. We suggested, however, that they may be unsuited to HARPS because of the effect on competition. We feared that the first company to develop HARPS could flood the market, taking all the available licences. Competitors would then be prevented from entering the market, even if they provided a better service. We provisionally concluded that there should be no power to control the total number of HARPS vehicles in a given area.

7.149 Consultees were split on this issue. Out of 56 consultees who replied, 26 (46%) agreed that there should be no such powers, 21 (38%) disagreed, and 9 (16%) did not come to a firm view. Consultees were split as to whether the market could appropriately regulate numbers without intervention. There was also disagreement on the effect of uncertainty; some argued that uncertainty meant restrictions were not warranted, others thought it required powers to respond to issues as they arise.



⁷¹ For example, in 1654 limits were imposed on the number of hackney carriages in London. CP2, para 7.88.

Arguments against quantity restrictions

7.150 RoSPA commented that quantity restrictions can harm passengers and discourage competition. They put the case against quantity restrictions as follows:

RoSPA agree with the advice of the Competition and Markets Authority, which states that “Quantity restrictions may cause harm to passengers through reduced availability, increased waiting times, reduced scope for downward competitive pressure on fares and reduced choice. They also may increase the risk to passenger safety if they encourage the use of illegal, unlicensed drivers and vehicles.”

Quality restrictions could also offset the benefits of innovation. For automated services, it is important to encourage competition. The first developer will not necessarily be the best. If the first one or two operators flood the market, an arbitrary cap would then prevent another competitor from entering the market. This is true even if the new operators are able to offer a better, safer or more innovative service. It is also difficult to set a restriction in terms of new technology, as public acceptance of the service may increase and demand for the service could become higher over time.

7.151 SMMT also thought that consumers would be disadvantaged:

Quantity restrictions distort the market and work against the interest of consumers, as they will result in reduced availability, increased waiting times, reduced scope for downward competitive pressure on fares and reduced choice.

7.152 AXA believed quantity restrictions would stifle innovation:

AXA believe that imposing quantity restrictions may not be a strategy that is conducive to effective competition between operators or an environment that encourages innovation, especially in the formative years. Preventative measures such as road pricing may be more beneficial for managing the concerns raised above.

7.153 HORIBA MIRA thought that any cap would be arbitrary and could entrench first movers:

Any cap could only be based on an arbitrary guess as there is insufficient data on what the services will look like, and would result in unfair restrictions on those who are later to market (potentially creating pressure to rush vehicles to market before they are ready in order to reserve a space within the quota...).

7.154 Many consultees thought that the market would regulate itself in regard to quantities. P. Whitfield Consulting, ITS UK, Oxbotica and ALBUM thought that the issue was one of supply and demand.

7.155 Several consultees, including Stagecoach Bus Group and FirstGroup plc, thought that kerbside regulation and road pricing would be better tools to control numbers. Tim Marlow Ltd thought that “it would be better to use sophisticated dynamic road and kerb pricing to influence levels of usage and thus effectively the total number of HARPS vehicles on the road at any given time”. KPMG LLP commented:

Currently, to our knowledge, no other country has prescribed such regulation for autonomous vehicles. Instead, to combat the potential market failure of increased

VMT, the other regulations suggested above, such appropriate road or parking prices, may be more appropriate.

Arguments for quantity restrictions

7.156 Consultees who supported quantity restrictions were sceptical whether, in practice, the market would control HARPS numbers and congestion to a sufficient extent. Consultees in this group noted the uncertainty surrounding the effects of HARPS, and the varying needs of local areas, arguing that local authorities needed the power to respond to issues as they arise. Additionally, some consultees thought that ensuring accessibility may require quantity restrictions.

7.157 Some consultees thought that the market cannot be relied upon to avoid congestion. Kennedys Law LLP thought that the uncertainty as to the popularity of HARPS means that their numbers should be “kept under close scrutiny and review”. Transform Scotland and SAPT argued:

Bus deregulation has led in some cases to increased congestion in city centres due to “bus wars” between duplicated services. Unrestricted competition in provision of public transport is incompatible with the overriding need to reduce emissions and road congestion. Comparison of the declining usage of buses in the UK with the increased use of public transport in many continental countries shows that integrated public transport networks attract more use than deregulated services based on on-street competition.

7.158 Some consultees thought that quantity restrictions are justified by the differing needs of local areas, and should be subject to local authority discretion. MACS thought that “powers to impose quantitative restrictions should lie with local authorities because of the geographical divergence between rural and urban in Scotland.” AVIVA thought quantity restrictions should depend on “the operational design domain, geographical area, usage and customer demand.” The Urban Transport Group stated:

Transport authorities should have the power to impose quantity restrictions on HARPS, informed by the needs and priorities of their local area. The rapid growth of private hire services like Uber in recent years has contributed to congestion and authorities need the flexibility to prevent over-supply of vehicles. These powers may not ever be used but they are a useful back-up should market mechanisms fail.

Authorities also need the power to prioritise some forms of HARPS over others – for example, they may want to licence a number of smaller feeder services that connect people to main mass transit networks and/or prioritise HARPS with the capacity to carry larger numbers of people to make the most efficient use of road space.

7.159 TfL also argued for local discretionary powers to control numbers, stating that the uncertainty surrounding HARPS requires that appropriate tools to respond to issues as they arise:

We disagree with the proposal and believe that it is essential that local authorities will be allowed to manage the number of total HARPS and consider varying the limit depending on the geographical area and the existing provision of public transport to

ensure HARPS are actively contributing towards achieving the city's transport goals.....

It is also essential that provision of such powers is legislated upfront, rather than facing the challenge of managing this retrospectively. In the long term, it should be possible to ease or even lift quantity restrictions; however, it is important that lessons from similar areas where there haven't been powers to manage numbers are learned and that appropriate powers are available.

7.160 Similarly, TfWM also pointed to the uncertainty as to real-world impact of HARPS, and queried whether the market will in practice be a sufficient mechanism to control numbers:

Whilst the consultation implies that road pricing and parking pricing will be mechanisms to ensure the right equilibrium of supply and demand, and thus naturally manage the number of HARPS vehicles in use, this may not work in practice. Whilst imposing quantity restrictions may limit technological innovation or competition, it should not wholly be discounted as unnecessary until the real-world impacts of HARPS are understood, especially in terms of managing potential adverse impacts on the mass-transit network.

7.161 Another argument concerned accessibility. Richard Sarginson wrote:

I suggest that HARPS will not be able to offer all the services that are now provided by human-driven cars. The taxi driver, in particular, offers help and assistance to the elderly and infirm to load and unload their baggage (eg food from the supermarket etc.).

If numbers of HARPS are not restricted, I can see that, in many areas, our taxi driver will likely disappear completely because services of this type alone will not provide a living. There needs to be a way having both HARPS and human-driven vehicles. This may well mean that the supply of HARPS may need to be limited to ensure that there will be an on-going supply of human-driven vehicles.

Other

7.162 Some consultees gave balanced reasons for and against quantity restrictions, without coming to a firm view. Garry Staunton (UK Atomic Energy Authority) stated:

A complex question - want to avoid a rash of start-ups many of which will inevitably fail, but predicting which will fail is virtually impossible and would restrict innovation. Need to ensure that all actors meet their HARPS license conditions and that the fleet is capable of meeting the needs of those with additional accessibility requirements.

7.163 The Bar Council thought that at present, such powers are unnecessary, but they may be required in due course. CIHT said the issue merited further investigation:

CIHT recognise the issues of hampering competition and "after the event" caps on automated vehicle quantities but believe that other models than those proposed should be investigated.

THE WAY FORWARD

- 7.164 It is crucial that local authorities have the tools they need to manage the introduction of HARPS so as to meet transport and wider objectives for their communities. The move towards automation is not taking place in isolation. It is part of a wider revolution in road transport, brought about by the need to combat climate change, improve air quality and tackle congestion.
- 7.165 In March 2020, DfT described the challenge of decarbonisation and committed itself to a Transport Decarbonisation Plan by November 2020. This set out a vision in which “we will use our cars less and be able to rely on a convenient, cost-effective and coherent public transport network”.⁷² The Government is also committed to “place-based solutions”, which address issues such as emissions “at a local level through local management of transport solutions”.⁷³
- 7.166 The revolution brought about by decarbonisation and automation will affect every aspect of the way we regulate roads. As discussed below, it will place new pressures on TROs and parking charges and will re-ignite the debate over road pricing. However, these issues are not specific to HARPS. They apply much more widely. We therefore think they may be more appropriately dealt with by DfT across different modes (including automated vehicles) rather than specifically as part of this review.

Traffic Regulation Orders (TROs)

- 7.167 Consultees emphasised that although TROs provide flexible powers, many are still paper-based. Furthermore, the procedure for creating them is expensive, cumbersome and out-of-date. There are major challenges ahead to digitise existing orders and to maintain a digital system. At the same time, many new TROs will need to be created quickly, to effect the changes involved in promoting cycling, walking and shared transport (including HARPS). This will require a faster, more streamlined system for making orders.
- 7.168 Many consultees welcomed the TRO Alpha review and the work that preceded it.⁷⁴ We hope that the Government will give priority to TRO reform as part of its work on the future of transport. In addition to its other benefits, we see this work as an important precursor to the successful introduction of automated vehicles.
- 7.169 Finally, we note that on 21 April 2020 the Government published guidance designed to enable local authorities to make TROs, even if the COVID-19 emergency made it impossible to advertise in local print newspapers. It recommended alternative ways to ensure the public is informed, including online newspapers, leaflet drops, local radio

⁷² DfT, *Decarbonising Transport: Setting the Challenge* (March 2020), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/878642/decarbonising-transport-setting-the-challenge.pdf, p 3.

⁷³ DfT, *Decarbonising Transport: Setting the Challenge* (March 2020), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/878642/decarbonising-transport-setting-the-challenge.pdf, p 7.

⁷⁴ BPA, *The BPA Traffic Regulation Orders Guide: Best Practice and a Path to the Future* (July 2019), https://www.britishparking.co.uk/write/Documents/TIR%20Board/BPA_TRO_Best_Practice_Guide_2019.pdf See also, DfT/North Highland, *Local Transport Data Discover* (2018), <https://www.gov.uk/government/publications/local-transport-data-discovery-findings-and-recommendations>.

and using council mailing lists and websites.⁷⁵ We hope that the experience of using these alternatives can inform future developments.

Kerbside regulation and pricing

7.170 The revolution in urban transport will require communities to rethink the way the kerbside is regulated and paid for. The Government's decarbonisation review points out that around 25% of cars are parked on streets overnight.⁷⁶ As these cars become electric, they will need assured access to charging points. At the same time, the move away from private cars towards shared vehicles (including HARPS) is likely to require a change in the balance of parking charges, in which shared vehicles pay relatively less, while private cars will pay relatively more.

7.171 We are keen that local authorities should have all the powers they need to act flexibly. This would include charging in response to demand and setting different charges for different vehicles. Our current view is that the legislation is already sufficiently wide, and would (for example) allow local authorities to treat classes of vehicles differently. We do not see a need for legislative change at this stage. However, if local authorities find that they would benefit from new powers, we hope that the Government will respond favourably.

Road pricing

7.172 Many consultees advocated for renewed debate about road pricing to meet the challenges of improving air quality and reducing congestion, while replacing fuel duty. There was also considerable interest in the opportunities provided by new technology for more sensitive road pricing systems, which depend on miles travelled and other factors. We are grateful to the many consultees who provided detailed discussions of these issues.

7.173 We see a strong case for using road pricing as a way of managing the challenges of HARPS and urban transport more generally. However, road pricing raises issues which extend far beyond HARPS, including how to approach road taxation in the post-fossil fuel world. These issues may be more appropriately considered by DfT and Transport Scotland rather than by the Law Commissions. We hope that the Transport Decarbonisation Plan will include a discussion of road pricing and we will share the responses we received on this issue with the Department and Transport Scotland.

Quantity restrictions

7.174 A majority of consultees supported a phased approach to HARPS introduction, in which the agency licensing HARPS operators has power to limit the number of vehicles any given operator can use within a given area for a prescribed period. However, many consultees stressed the need for local input in this process. We intend to return to this issue in our next Consultation Paper, to bring forward more specific proposals.

⁷⁵ DfT, *Advertising traffic regulation orders during coronavirus (COVID-19)* (21 April 2020), <https://www.gov.uk/government/publications/traffic-orders-advertising-during-coronavirus-covid-19/advertising-traffic-regulation-orders-during-coronavirus-covid-19>.

⁷⁶ DfT, *Advertising traffic regulation orders during coronavirus (COVID-19)* (21 April 2020), <https://www.gov.uk/government/publications/traffic-orders-advertising-during-coronavirus-covid-19/advertising-traffic-regulation-orders-during-coronavirus-covid-19>, p 20.

7.175 There was much greater controversy over “after the event caps”, which regulate the total number of HARPS vehicles in a given area. Given the controversies involved, we think this may be an issue for the UK and Scottish Government rather than the Law Commissions. We will pass the responses to DfT and Transport Scotland.

Chapter 8: Integrating HARPS with public transport

OVERVIEW

- 8.1 As the Government's *Future of Mobility: Urban Strategy* emphasises, "mass transit must remain fundamental to an efficient transport system".⁷⁷ In Chapter 8, we said that Highly Automated Road Passenger Services (HARPS) could contribute to mass transit in two ways. First, HARPS may operate as mass transit; some may be larger and operate in ways we associate with buses and trams. Secondly, smaller HARPS may be part of an overall transport mix which encourages people to use mass transit.
- 8.2 We thought that if HARPS operated in a way which was functionally equivalent to buses, they should only be subject to bus regulation on issues such as franchising, route registration and punctuality. We suggested that if HARPS did not operate in this way they could instead be part of a new statutory scheme promoting collaboration with transport authorities. We provisionally proposed that HARPS should be subject to bus regulation if: (i) they can transport more than eight passengers at a time and charge separate fares to each passenger; and (ii) do not fall within specified exemptions (such as group arrangements or excursions).
- 8.3 Around half of consultees agreed that HARPS meeting these criteria should be subject to bus regulation. However, there was debate about the proposed threshold of eight passengers. Developers expressed concern that there would be over-regulation of larger vehicles, while transport authorities thought there might be under-regulation of smaller ones. When we asked whether the proposal would raise any particular issues, the most common concern was that making HARPS subject to bus regulation would stifle innovation.
- 8.4 Some aspects of bus regulation (such as punctuality provisions) may be difficult to apply to HARPS with flexible routes. We asked consultees whether bus regulation should only apply to HARPS which run fixed routes with a degree of regularity. Those consultees who agreed thought this was a logical solution. Those who disagreed were split between those who thought bus regulation should not apply to HARPS at all, and those who thought it should apply irrespective of route characteristics. We note the Department for Transport's (DfT) recent call for evidence on this issue.⁷⁸
- 8.5 Finally, we looked at a possible statutory scheme to foster collaboration between HARPS operators and transport authorities. This would be particularly relevant to smaller HARPS that would not be subject to bus regulation under our provisional proposals. We asked if a transport authority that provides facilities for such HARPS should be able require operators to participate in joint ticketing schemes. Most

⁷⁷ DfT, *Future of Mobility: Urban Strategy* (March 2019)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/846593/future-of-mobility-strategy.pdf, principle 4.

⁷⁸ DfT, *Future of Transport Regulatory Review: Call for Evidence* (March 2020),
<https://www.gov.uk/government/consultations/future-of-transport-regulatory-review-call-for-evidence-on-micromobility-vehicles-flexible-bus-services-and-mobility-as-a-service>.

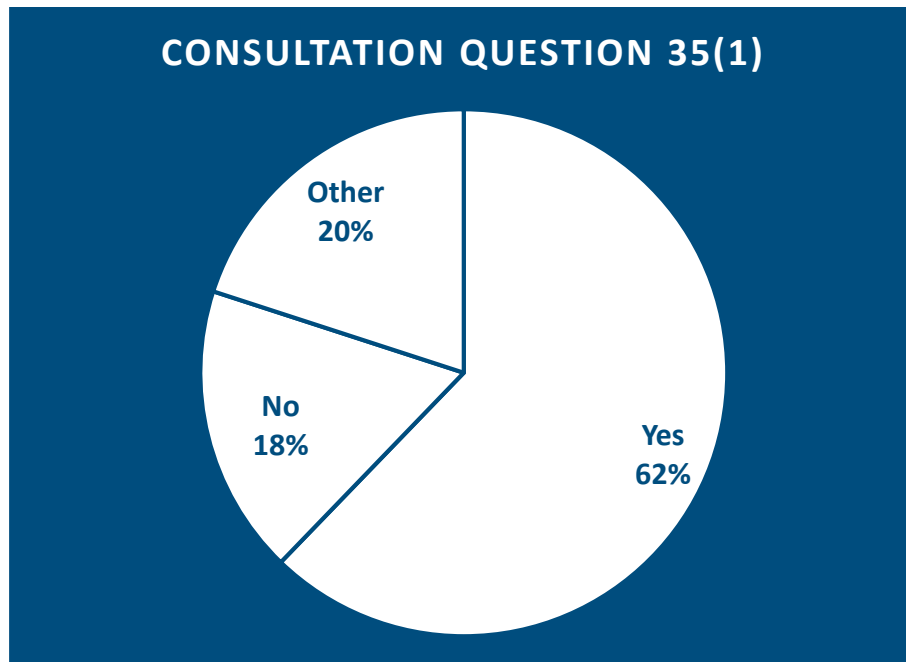
consultees supported this, particularly if it allowed consumers to plan, book and pay for journeys on a single digital platform. Those who disagreed preferred voluntary arrangements.

WHEN SHOULD HARPS BE SUBJECT TO BUS REGULATION?

Q35: Do you agree that a HARPS vehicle should only be subject to bus regulation:

- 1. if it can transport more than eight passengers at a time *and* charges separate fares; and**
- 2. does not fall within an exemption applying to group arrangements, school buses, rail replacement bus services, excursions or community groups?**

- 8.6 In Chapter 8, we outlined some of the complexities of UK bus regulation. London runs a franchised system, in which a public body sets routes, fares and service levels, and then puts services out to tender. Elsewhere, bus services have been deregulated; operators decide routes and fares and register these routes with the Traffic Commissioners, who set punctuality requirements. Recent legislation has encouraged partnerships between traffic authorities and operators. It also allows for more cities to move to a franchised model.
- 8.7 Chapter 8 did not discuss safety requirements. At present, all buses must be licensed as Public Service Vehicles (PSVs). Bus operators must therefore be licensed PSV operators. Similarly, under our proposals, all HARPS would need to be operated by licensed HARPS operators and meet the safety requirements set out in Chapter 4. This is in addition to the safety assurance requirements that would apply to the automated vehicles themselves, and which we covered in our first consultation paper. In this Chapter, we were concerned with a more limited question: when should HARPS be treated as bus services for the purposes of franchising, route registration, punctuality and partnerships?
- 8.8 It is not the task of this project to redesign bus regulation, nor to reach a conclusion on the relative merits of franchising over deregulation. Instead, our task was to consider if a HARPS that resembled a local bus service should be subject to the same regulations as other local bus services in the area. We felt that it should.
- 8.9 At present, a bus service is defined as a PSV which carries passengers at separate fares, subject to certain exemptions. To be local, passengers must be able to alight within 15 miles of where they board. Although HARPS will not be PSVs, we provisionally proposed that they should be treated as buses if they were capable of carrying more than eight passengers at a time; charged separate fares; did not fall within any of the existing exemptions; and meet the “local” definition.



- 8.10 Question 35(1) asked about the criteria of eight passengers and separate fares. Out of 53 consultees responding, 28 (62%) agreed and eight (18%) disagreed. Others came to no firm view. Although most consultees were happy with the requirement to charge separate fares, many thought the threshold of eight passengers should be reconsidered.
- 8.11 Question 35(2) asked about exemptions. Of the 49 consultees who engaged with this part of the question, 24 (48%) agreed, 11 (23%) disagreed and 14 (29%) did not come to a conclusive view.
- 8.12 Those who agreed with our proposal did so for pragmatic reasons. They accepted that HARPS carrying more than eight passengers at separate fares were functionally equivalent to bus services. Among those who disagreed, several looked to the future; they argued for innovation and fresh-thinking about bus regulation in an automated and decarbonised world. Several pointed to the problems caused by deregulation (“bus wars”) and advocated greater local planning.
- 8.13 There was also a widespread misunderstanding, in which consultees feared that safety regulation would not apply to vehicles which did not meet the definition of a bus. This was not our intention and we regret the confusion on this point. Whether or not a HARPS operates as a local bus service, the automated driving system would still need to be authorised (as discussed in our first consultation paper) and the operator would still need to be licensed (as provisionally proposed in Chapter 3). All safety requirements would apply.

Agreement with the proposal

- 8.14 Consultees who agreed with our provisional proposal did so because they believed HARPS should be treated like buses when carrying out the same function.
- 8.15 The Bar Council thought this was a “logical approach”. UK Bus Division of FirstGroup plc (FirstGroup plc) argued that:

The same rules and regulations should apply irrespective of whether the vehicle is driven or autonomous, including those relating to flexible service licensing for demand responsive routes.

- 8.16 Transport for West Midlands (TfWM) noted that classification of HARPS will have an impact on the use of bus infrastructure:

...it is important that vehicles have an awareness and understanding that when they are not under bus regulation (i.e. if operating as a taxi service on a particular day) they are not permitted to use bus infrastructure such as bus stops and shelters (and where relevant, bus-only lanes) which may have detrimental impacts on bus services.

Eight passengers

- 8.17 Under current law, a bus must be a PSV, and all vehicles which carry more than eight passengers must be PSVs. We therefore incorporated the eight passenger threshold as part of our proposed definition.

- 8.18 Transform Scotland agreed with the threshold, provided it was based on capacity rather than passengers:

Regulation would be based on the vehicle capacity rather than the actual number of passengers being transported (many rural bus services carry fewer than eight passengers). HARPS will be competing with conventional buses, so should comply with equivalent regulatory requirements.

- 8.19 However, several consultees were unsure whether eight was the appropriate number. Wayve thought it “unclear at this stage of technical maturity whether the definition should be based on eight passengers, or some other size”. Amey Consulting argued that “if HARPS are modular (multiple vehicles combine) then they could be classed as a bus even if each vehicle has four passengers”. Richard Sarginson drew attention to:

those villages, hamlet and perhaps even the isolated cottage etc that has no bus service now, because the costs do not justify it and the need to pay a driver makes it uneconomic. Small HARPS vehicles, carrying fewer passengers, could well provide a way of providing such a bus service.

- 8.20 The Confederation of Public Transport (CPT) also called for a “rethink”:

We believe that the passenger number threshold might require a rethink, given that this threshold has arisen as a result of the licence required to drive such a vehicle – which will not be relevant for an autonomous/driverless vehicle.

- 8.21 Pinsent Masons LLP suggested that some HARPS services carrying over eight passengers should not be subject to bus regulation:

We believe HARPS might lead to a more diverse range of public transport offerings, and because of this the eight people limit might either not be the most appropriate way to differentiate between them or it might lead to regulatory shopping.

- 8.22 Transport for London (TfL) generally agreed with our proposal, but thought that the threshold based on passenger numbers should be reviewed:

There is potentially a risk that focussing on 8 passengers could be limiting in the future. It could be that vehicle size, type or indeed the operational design domain are more important factors when considering bus regulation in London in the future. This question poses a much wider discussion about vehicle classifications and whether a more holistic review is needed. It is important that any changes applied to HARPS vehicles are consistent across all passenger vehicle types (PHVs, PSVs or LSPs) and that the arbitrary idea of 8 vs 9 passengers is not restrictive of future regulation.

Disagreement

Over-regulation of larger vehicles

- 8.23 Some argued that applying bus regulation to HARPS was heavy-handed and could stifle innovation. As Burges Salmon LLP said:

There may be no technical reason that a HARPS vehicle needs to be equated to a bus or subject to bus regulation. That approach would potentially limit innovation and fresh thinking as to the distinct roles that such vehicles could have in a mass transit system potentially alongside and complementing conventional buses.

- 8.24 Drawing upon their own experience, Five thought that current bus regulation was overly complex and inflexible:

While there are some benefits to designated bus services (for example, access to bus lanes and bus stops, and in some cases Selective Vehicle Priority at traffic lights), our own investigation of the bus regulations as part of the StreetWise project served to reinforce that the existing regulations are overly complex and largely inflexible even in cases where the objective and intent has been the opposite. Attempting to extrapolate the existing regulations further for HARPS would be ill advisable.

Under-regulation of smaller vehicles

- 8.25 By contrast, some consultees were concerned that buses would face unfair competition from vehicles which fell outside the proposed definition, either because they were smaller or because they had a different fare structure. TfWM thought that smaller HARPS could seek to disrupt the bus market:

There potentially needs to be some thought on whether HARPS operators may choose to operate in a different manner in response (i.e. introduce many 7-seated vehicles), and potentially disrupt the planned bus network.

- 8.26 Similarly, the Urban Transport Group said:

We do not accept the assumption in the rest of the document that there should be a cliff edge between a bus (which is part of a locally determined regulatory framework which includes specified fares up to, and including, fully specified fares) and what is in effect a HARP taxi (over which local areas have no direct powers and where fares are left entirely to the market). This creates an obvious risk that HARPs taxis will use their different regulatory position to undermine public transport.

8.27 AXA thought that operators might evade regulation by adapting certain fare structures:

If there is a strong belief that operators would seek to evade bus regulation by modifying their fare structure, AXA propose that the legislation considers HARPS which habitually follow predetermined routes as this seems more to the character of a public transport system and considers pricing, routing, traffic and community concerns.

The need for further review

8.28 Several consultees thought that the issue needed further review to reconsider either bus regulation generally or the role of HARPS within it. Amey Consulting said that “serious work needs to be done to understand whether bus regulations are appropriate” and to “update these regulations for a future automated world”. The Freight Transport Association said:

The current regulation needs to be considered in light of the operation mode of a HARPS in order to ensure that its application would be relevant and effective.

8.29 Gemserv thought that standards should be considered when more is known about what the introduction of HARPS might look like:

Current legislation may not take account of opportunities the new technologies can deliver in this context. It is suggested that this may be beyond the evolution of existing services and hence migration of existing legislation may not be appropriate.

8.30 The Metropolitan Police Service emphasised the need for clarity to allow for effective enforcement.

Applying existing exemptions

8.31 At present there are exemptions from bus regulation for group arrangements, school buses, rail replacement bus services, excursions and community groups. The 23 consultees who agreed that these exemptions should apply to HARPS either did not give reasons, or reiterated that HARPS should be treated as buses when they operate in an equivalent way. Among those who disagreed, many misunderstood the proposals and thought that safety provisions would not apply.

8.32 Three consultees felt that more thought is required to specify appropriate exemptions. Humanising Autonomy thought that “bus regulation needs to be amended first to see if/what HARPS vehicle would be applicable”. Amey Consulting argued that bus regulations “need to be updated for the 21st century where these terms need adapting”. Gemserv stated that it is “risky to infer from existing legislation how HARPS will be provisioned. It is likely to be subject to significant change”.

8.33 Some consultees made other suggestions. Oxbotica thought that “a provisional exception should be considered for an initial phase of deployment of HARPS until its usage determines which regulation is applicable”.

PROBLEMS IN APPLYING BUS REGULATION TO HARPS

Q36: We welcome views on whether any particular issues would arise from applying bus regulation to any HARPS which transports more than eight passengers, charges separate fares and does not fall within a specific exemption.

- 8.34 We were keen to explore whether there were any specific problems in applying bus regulation to HARPS. Overall, 42 consultees provided views, of whom nine (20%) did not think any specific issues would arise.
- 8.35 Among the remaining 33 consultees, the most common concern was that bus regulation would discourage innovation, especially when applied to flexible routes. Some consultees raised concerns about ensuring effective coexistence with buses.

Encouraging innovation

- 8.36 Several consultees thought that treating HARPS as buses would stifle innovation.
- 8.37 Tim Marlow Ltd suggested a compromise, applying the parts of bus regulation which are appropriate, while also making HARPS-specific provision:

If HARPS regulation is set up with multiple sub-categories, including one for vehicles capable of transporting more than eight passengers and where separate fares are charged then the regulation can still be HARPS specific and but utilise those parts of existing bus regulation that are most appropriate.

- 8.38 Uber argued that HARPS should not be treated as a form of mass transit:

We encourage the Commission to explore opportunities to partner with HARPS to maximise the use of public transport, but not to treat HARPS, for regulatory purposes, as equivalent to a mass transit service.

The potential for new services

- 8.39 Several consultees stressed that HARPS could provide new services, rather than simply replicating the current functions of buses. Connected Places Catapult said:

We would encourage all stakeholders to consider what automation could enable, rather than thinking we are simply removing the driver from a traditional bus service. Removal of the driver enables lower operating costs, but it also provides the operational flexibility of not needing to return the driver to where they need to be at the end of a shift. Automated buses could remain in service at all times (other than when being maintained) at negligible operating cost. This could enable a more demand-responsive service. When not demanded, vehicles could wait at stops for passengers, like how a taxi will wait in a rank, and could distribute themselves along the routes.

- 8.40 Maple Consulting Ltd noted the potential ability of HARPS to provide services in areas where public transport is limited:

HARPS potentially offers a lot of opportunities for public transport provision where buses are currently uneconomic, e.g. rural areas, night services etc. This potentially offers consumers a better service and operators to have less subsidy, creating a win-win.

Flexible routes

8.41 When it came to specifics, the greatest concern was that applying bus regulation to HARPS would discourage flexible routes. As the Royal Society for the Prevention of Accidents (RoSPA) said, “it is difficult to register routes and apply punctuality provisions to services which do not run to routes and timetables”.

8.42 Similarly, George Economides (Oxfordshire County Council) noted that bus regulation requires routes to be determined ahead of time:

One crucial issue is the request for PT route to be submitted in advance to the traffic commissioner. This needs to be relaxed to allow flexible routing. Also, sharing information with local authorities for traffic management and asset management (road maintenance).

8.43 Reed Mobility thought that bus regulations might “limit innovation that may be possible through the use of automated vehicles and the associated technologies for on-demand transport”. However, bus regulations could be used:

Provided they can be suitably adapted in consultation with the bus industry (and noting that innovative services like ArrivaClick and Oxford PickMeUp have been possible within appropriate frameworks), applying bus regulations to HARPS intended to carry more than eight passengers seems to be appropriate.

8.44 We consider flexible bus routes in more detail below.

Learning from bus deregulation

8.45 Other consultees pointed to the effects of unrestricted competition on the bus market, fearing that competition from HARPS would undermine local services. Sustrans said:

We must be wary of the impacts of Deregulation of buses – bus service quality has declined dramatically in recent years as a consequence of deregulation. Introduction of HARPS can take much learning from commentary on the impact of regulation/deregulation of buses.

8.46 IAM RoadSmart warned against “any return to the ‘bus wars’ of previous times” and argued for protections “if HARPS operators chose to target popular bus routes to generate income”.

8.47 Transport for Greater Manchester highlighted that:

many of our residents are reliant on the affordability, accessibility and regularity offered by scheduled, fixed-route bus services, however, GM like many areas of the UK, is experiencing declining patronage on our bus networks, leaving a number of routes in a fragile state. Through the Bus Reform process, we are exploring measures to strengthen the network and reverse declining patronage and loss of key routes, however, a lack of adequate local level regulatory tools to manage the introduction of a HARPS fleet could seriously undermine these efforts.

Staffing issues

8.48 Some consultees were concerned about unstaffed buses. The Society of Motor Manufacturers and Traders (SMMT) noted that bus drivers may have certain obligations, such as passenger assistance, which “either cannot be performed or are no longer necessary in HARPS”. Richard Sarginson stated that presently, bus drivers control who boards the bus; he did not think that video-link remote control would be an adequate substitute.

8.49 TfL was concerned about the impact on vulnerable individuals and fare collection:

More generally in a bus context, HARPS, in the absence of a driver, could present issues for vulnerable individuals, as highlighted in Chapter 6 of the consultation report. For example, how would a wheelchair ramp be deployed? Or how would a visually impaired passenger or individual with dementia be reassured? Finally, while currently the driver has an important role to play in managing fares, it is difficult to envisage how this would work in the AVs world without mass fare evasion taking place.

Overlapping regimes

8.50 As with the previous questions, some consultees raised the issue of dual licensing. TfL thought this required further thought:

It is also worth acknowledging that any transition to fully AVs will most likely be very gradual. It is thus conceivable that a bus operator could hold both a conventional PSV operator licence and also a HARPS operator licence. It is therefore important to understand if there are any risks or concerns with operators holding dual licences.

8.51 Kennedys Law LLP repeated their concern that obligations would be unclear:

There is a risk that subjecting such HARPS vehicles to multiple regimes will lead to a loss of clarity in relation to the obligations imposed. There is a further risk of conflict between competing regulations. Care must therefore be taken to ensure that the regulations must work in tandem.

No issues

8.52 A minority of consultees, including Intel Corporation (and Mobileye, an Intel Corporation company), foresaw no issues. Stagecoach Group thought more problems would arise if bus regulation was not applied equally to HARPS and buses. UK Computing Research Committee saw no issues at present, but argued that “regulations should be flexible in the face of possible new business models not foreseen yet.” ITS UK stated:

Regulation-wise, no specific issues can be foreseen at this time. A bus service should operate the same way and be subject to the same oversight etc. whether it has a driver or not. The users are buying a service and the service is essentially the same with and without a driver.

8.53 Automated Intelligent Driving GmbH felt that further investigation would be required to determine the effects of mapping existing obligations for bus operators onto HARPS operators.

FLEXIBLE BUS ROUTES

Q37: We welcome views on whether a HARPS should only be treated as a local bus service if it:

- 1. runs a route with at least two fixed points; and/or**
- 2. runs with some degree of regularity?**

8.54 In the Consultation Paper, we commented that it is difficult to register routes for, and apply punctuality provisions to, services which do not run to routes and timetables, at present in England and Wales, specific exemptions apply to “flexible bus services”, whose primary purpose is to carry passengers who have booked in advance and whose collective requirements determine the route of each journey.⁷⁹ However, these regulations are complex, and only exempt some services from some aspects of bus regulation. We welcomed views on a more radical approach, which would apply bus regulation to HARPS only if they ran between at least two fixed points with some regularity.

8.55 Out of 49 consultees who provided views on this, 23 (46%) thought the two criteria were appropriate for determining which HARPS vehicles should be subject to local bus regulation; eight (17%) disagreed; and 18 (37%) came to no firm view.

Arguments for confining bus regulation to fixed routes

8.56 Many consultees thought these criteria were appropriate.⁸⁰ The most common reason given was that a regular service between two routes is integral to the notion of a bus, SMMT said that “such service is to all intents and purposes a local bus service, except that there is no driver”. Likewise, John Rainbird noted that “if the HARPS offers a service which includes these two features it is near enough to a normal bus service to justify treating it as such”. Uber said the absence of a fixed route was important in distinguishing buses from new services, such as its partnership with Toyota to develop a self-driving “e-Palette” vehicle that could carry more than eight passengers when employed for passenger transport, and would operate without a fixed route.

Better definition needed

8.57 Some consultees thought the requirements should be better defined. Aviva provided qualified support if “the regulations and frameworks ensure absolute clarity about the parameters as to what constitutes and ‘local bus service’”. TfWM requested further definition of the “degree of regularity” criterion.

⁷⁹ The provisions were introduced in 2004 as amendments to the Public Service Vehicles (Registration of Local Services) Regulations 1986. For further information see Office of the Traffic Commissioner, *The Registration of Flexibly Routed Local Bus Services*, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/555828/registration-flexibly-routed-local-bus-services-guide-for-operators.pdf.

⁸⁰ Including: ALBUM, Campaign for Better Transport, Dean Hatton (NPCC), FTA, SAPT, Stagecoach Bus Group, Law Society of Scotland, UKCRC, MPS, Urban Transport Group, FirstGroup plc, IUA, Kennedys Law LLP, CPT, RoSPA, Pinsent Masons LLP, Wayve and Transform Scotland.

Arguments against

8.58 Consultees who disagreed with the fixed route requirements were split between those who thought the requirements over-inclusive and those who thought them under-inclusive.

8.59 Some consultees thought HARPS should be treated as buses irrespective of whether they follow a regular fixed route. TfWM argued that not all bus services would satisfy the criteria:

There are a number of services operating in the UK that only run to certain locations on the route if passengers on board request it to; these examples are most prevalent on late night services with heavy demand from one location. We would therefore question whether these routes - which may in the future be operated by HARPS type vehicles - would be treated as a local bus service if condition 1 were to apply.

8.60 TfL was particularly concerned that confining buses to those with regular fixed routes would take such services outside the franchised network and would exempt them from the need for a London Service Permit:

The regularity condition would mean that any HARPS that operate in flexible/demand-responsive way would fall outside the bus regulation, which differs to the current regime (see flexible services or London Service Permits) and would mean a step back, given the availability of DRT technology and applications.

8.61 Other consultees thought HARPS should not be subject to bus regulation at all, whether or not they follow regular routes. Five thought this a better compromise than our proposal in Consultation Question 35, but nonetheless argued that “it would almost certainly be better to think of HARPS independent of existing bus regulations”. Oxbotica argued that:

No, these two conditions are not sufficient to treat a HARPS as a bus. It is likely that HARPS will have a higher degree of flexibility and therefore further consideration is needed to define if HARPS will fall under one of the current categories of service or it will need its own dedicated category.

8.62 Finally, the Office of the Traffic Commissioner stressed that from an enforcement perspective there was little benefit to imposing restrictions on flexible services:

Although the monitoring of the reliability of these services can be difficult, they do not account for many of the complaints made to the traffic commissioner on bus compliance issues.

The traffic commissioners remain to be convinced of the benefits of imposing restrictions as described in the consultation on these services. To do so would create a two-tier system for conventional and automated vehicles with no clear reasoning or obvious benefit.

Further consideration required

- 8.63 Some consultees thought further consideration is required. Maple Consulting Ltd advocated a “wait and see” approach. Tim Marlow Ltd stated that “there is probably not the need for this further sub-category but this may warrant further consideration when considering the finer detail of the regulations.” AXA welcomed further consideration:

HARPS may operate in a far more flexible manner than current conventional local bus services. AXA would welcome further analysis on whether the two above points are sufficient to define a local bus service in an automated vehicle environment.

- 8.64 Richard Sarginson thought the definition should change over time:

I would like to think that this definition of a bus service will become inadequate due to the introduction of HARPS and the development of new, differently organised services. However if HARPS is a driverless clone of the present system, then yes, this definition will do.

The regulations though, perhaps could be allowed to be changed in the light of new services that might be offered using HARPS.

- 8.65 Intel Corporation (and Mobileye, an Intel Corporation company) suggested an additional criterion:

These two criteria define rather well a local bus service and could be applied to HARPS operators. However, the existence of an agreement between the operator and the local authority could also be considered as an indication for the existence of a local bus service, which would give the operator special rights and obligations.

Recent developments in flexible bus regulations

- 8.66 DfT has set up a regulatory review on the Future of Transport. In March 2020, the review published a call for evidence, which canvasses views on how well the current flexible bus regulations are working. It suggests easing some requirements, such as less rigid registration requirements and allowing more ad hoc passengers. It is not our intention to duplicate this work.

STATUTORY PARTNERSHIPS

Q38: We seek views on a new statutory scheme by which a transport authority that provides facilities for HARPS could place requirements on operators to participate in joint marketing, ticketing and information platforms.

- 8.67 In our Consultation Paper, we considered ways to promote collaboration between transport authorities and HARPS operators. This is particularly relevant for those HARPS that would not be subject to local bus regulation, like those capable carrying eight passengers or less. We noted the many ways in which even such smaller HARPS could encourage people away from private cars, towards multi-modal trips involving active travel and mass transit (as when people take a HARPS to the station, or walk to the shops and take a HARPS back).

- 8.68 However, these benefits may only be realised if people find it easy to plan and pay for journeys. We noted the rise of digital platforms, often referred to as Mobility as a Service (or MaaS). These platforms can be accessed through a smartphone app, and provide a straightforward way to plan and pay for a journey, even if it involves more than one mode of transport.
- 8.69 We looked briefly at the various statutory bus partnership schemes. These work on the basis that if a transport authority provides facilities to operators, the authority has powers to require standards from operators. We asked about a similar statutory scheme between transport authorities and HARPS operators not covered by local bus regulation.
- 8.70 We envisaged that transport authorities could provide facilities to HARPS (such as use of priority lanes or waiting space near stations and other transport hubs). In return, operators could be required to participate in a digital platform (or MaaS) which provided through tickets.
- 8.71 Of the 51 consultees who provided views, 37 (74%) supported a statutory scheme. They thought that participation in MaaS would create a simple and accessible way of accessing services. Those who disagreed argued that such a scheme should be optional to encourage competition and noted that not all HARPS will carry out the same function. Some consultees emphasised that such schemes are already in development and thus such legislation is unnecessary.

Support for integrated ticketing

- 8.72 Most consultees supported legislation to encourage integrated ticketing. Amey Consulting thought it “critical” that HARPS be “part of a standardised integrated ticketing system”. Dean Hatton (National Police Chiefs Council) argued that “the key is to ensure there is a simple ticketing and charging system that is transparent and easy to understand”. IAM RoadSmart thought that integration “may require a mix of modes and operators and joint ticketing should be available if required”. Campaign for Better Transport thought that “this conformity would be beneficial for users”.
- 8.73 The Chartered Institution of Highways and Transportation said:
- CIHT supports the proposal to have a statutory requirement for joint marketing, ticketing and information platform aspects as they would be an important part of a Mobility-as-a-Service (MaaS) approach. Without a duty to participate, then the commercial incentives may not be sufficient at the outset to make this provision occur.*
- 8.74 The British Parking Association thought this approach would be welcomed by local authorities:
- Local Highway Authorities would welcome this to ensure fair competition and consumer affordability including impacts on bus, taxi and local community transport services.*
- 8.75 Chris Alford (University of the West of England, Bristol) said this approach would “improve uptake and usage ... including use by older people and those with disabilities”.

8.76 Uber referred to its Uber Transit Journey Planning feature which gives users:

the ability to plan door-to-door public transport journeys with step-by-step directions, complete with estimated fares and travel times provided in real time by a third party. All of these various partnerships leverage mobility as a service to extend the reach and efficacy of public transport system, and reaffirm that mobility as a service products can serve to complement a vibrant public transport system.

8.77 Transform Scotland and the Scottish Association for Public Transport were concerned that, absent such legislation, the transport network could be undermined:

It is essential where an integrated public transport system is planned or has been established by a transport authority that any HARPS should be part of this system. Otherwise a transport authority's public transport network could be undermined by HARPS.

8.78 Meanwhile, Sustrans supported integrated ticketing but pointed out that such schemes had yet to take off:

Integrated ticketing barely exists anywhere in the UK outside of London. Again, there are many lessons to be learned in the context of HARPS about why this hasn't happened.

The scope and content of MaaS schemes

8.79 Many of those supporting integrated ticketing outlined what might be involved. RoSPA described it in the following terms:

RoSPA can see the benefit of operators being required to participate in a Mobility as a Service (MaaS) scheme, by making information available, allowing booking through a single app and co-operating over ticketing. This might include joint promotions of services; using a standard set of zones; or following standard ticket rules (such as standard age-related concessions).

8.80 Tim Marlow Ltd thought it should also include active travel options and parking:

There is likely to be the need for a single platform underpinning MaaS in any given transport authority jurisdiction. This will need to be fed data on services available, including HARPS, mass transit and active travel options, along with pricing information from service providers and road/kerbside pricing from the authority itself. In this way the user could obtain multiple options for any given journey and choose from these, for example, the cheapest, the quickest or the most environmentally beneficial.

8.81 Nominet thought that the MaaS scheme would be best enabled through a dynamic registry which includes “a broader set of adapting rulesets and parameters for vehicle operations in real time”.

Opposition to a mandatory scheme

8.82 Some consultees thought that the MaaS scheme should not be mandatory, since different HARPS operators provide different functions. Oxbotica argued that:

A blanket scheme might not be the best solution for everyone. Provisions should be made to allow different options and flexibility.

- 8.83 Some consultees thought that, in relation to MaaS, HARPS are no different from conventional vehicles and do not require targeted provision. ITS UK argued that:

In principle HARPS are no different from other potential participants of a MaaS scheme and so, if legislation is to be introduced, HARPS should be treated as conventional buses/taxis etc.

- 8.84 HORIBA MIRA raised competition concerns:

Forced introduction of a single 'MaaS' system could be controversial as it would remove competition and go against the concept of the free market, placing a lot of responsibility upon agencies exercising the centralised control to get decisions right - decisions they are often poorly placed to make relative to those 'on the ground'.

- 8.85 SMMT said that HARPS should be treated equivalently to taxis:

While there is merit in participating in joint marketing, ticketing and information platforms, we do not think this should be made a requirement by way of a new statutory scheme. Some operators would prefer to maintain the exclusivity of interface with customers via their own app. There is no requirement for all ride-hailing operators today to participate in joint marketing, ticketing and information platforms. HARPS should not be treated any differently.

- 8.86 Some consultees who disagreed with a statutory approach thought that MaaS schemes would develop naturally. Gemserv pointed to:

a natural progression of digitally integrated services e.g. google map is more than a map and already provides a range of integrated transport option to complete a journey. Would suggest this is more a topic of standards to facilitate interoperability rather than intervention by the legislator.

The views of transport authorities

- 8.87 We were particularly interested to receive views from transport authorities, who would set the parameters of the suggested partnerships.

- 8.88 TfL took a cautious approach, and argued for local discretion:

Introducing quality partnership schemes on the basis that a transport authority provides facilities for HARPS and sets specific service standards for operators may lead to improved collaboration. However, it is unclear what the 'facilities for HARPS' would entail and how such a new statutory scheme would work, particularly in London where TfL already freely supply the market with Open Data, contactless cards are already accepted across public transport services and a well-integrated ticketing system is already in place.

There are also potential threats to the use of active and sustainable modes that must be balanced in any statutory scheme. For instance, by simplifying access to private road-based services, users may begin to switch trips away from walking, cycling and

public transport to the detriment of network efficiency, the environment and public health. As such, we believe there is a fundamental role for local and regional transport authorities in shaping these new transport services to their cities' needs. This will help cities to maximise the potential benefits for their populations as a whole, while minimising unintended consequences.

- 8.89 TfWM also emphasised that easy-to-use platforms should not deter people from walking and cycling. However, where MaaS was established, they thought that HARPS should be required to participate, irrespective of whether the transport authority provided facilities:

Regardless of whether transport authorities provide facilities, HARPS operators should be required to participate in joint marketing, ticketing and information platforms, to help integrate the services as part of the public transport network, and minimise risks relating to lack of information sharing or impacts on the mass transit network. Without this, there is a risk to the establishment of a MaaS style product.

- 8.90 The Urban Transport Group emphasised that MaaS should not undermine existing partnership and ticketing schemes:

We would not wish to see the powers available in the 2017 Bus Services Act weakened. Instead they should be strengthened in order to make it easier for local transport authorities to take up the powers contained in it.

- 8.91 Stevenage Borough Council noted our suggestion that HARPS might be permitted to use bus lanes. They thought this would be appropriate in only limited circumstances:

The summary document suggested the example of using bus lanes subject to the above. Allowing HARPS vehicles to use such facilities subject to such engagement only seems reasonable, if applied sufficiently stringently; allowing single occupant cars to congest all bus lanes in rush hour because they are advertised in the same place would be undesirable but allowing those HARPS vehicles whose occupants have bus tickets to use bus lanes to get to the bus station/stop would be more reasonable to provide a joined-up system of transport.

- 8.92 Transport for Greater Manchester thought that the proposed tools were insufficiently radical to ensure the right transport mix:

The paper references our plans for an integrated transport network set out in the GM Transport Strategy 2040, as well as those of other combined and city authorities, however, the paper advocates for the provision of a relatively weak set of reactionary regulatory tools for local transport authorities. We want to see HARPS aligned with our long-term priorities and strategies for the city region, such as our 'Right Mix' vision. This vision is the product of significant research to ensure that we aim for an appropriate modal split that maximises the wellbeing of our residents. The paper does not show sufficient analysis of how existing transport strategies like this may be impacted by the introduction of HARPS. We would welcome further investigation as the Law Commission continues its regulatory review, with a more evidenced comparison of the impacts that local or national licensing may have on this.

Other ways to build partnerships

8.93 KPMG LLP considered other ways in which authorities could encourage HARPS to be used for multi-modal trips:

There are a couple of potential legislative options which could help ensure multi-modal trips. One option would be to provide reduced fares for trips beginning or ending at a public transit station...In the U.S., cities have provided various levels of these subsidies for Uber and Lyft rides commencing or ending at public transit stations in an attempt to encourage multi-modal trips.

Another option could be to ban the operations of HARPS vehicles in certain areas within a city, requiring passengers to instead connect to public transit services. Several cities within the UK have already begun banning vehicles in certain city centres to make way for more pedestrians and cyclists.

8.94 KPMG LLP advocated voluntary partnerships “with objectives potentially linking into the DfT’s Future of Mobility objectives”.

8.95 Finally, Costain agreed with statutory partnerships, but suggested two other ways in which HARPS could help traffic authorities:

1) *HARPS to provide road conditions, providing geolocations for damaged TRO or roadside assets and in return transport authorities ensure road and other static or digital assets are maintained and repaired promptly, especially in suburban and rural areas.*

2) *HARPS operators to share travel movements of people (as per GDPR) with transport authorities such that future business cases or increased services could be ascertained, e.g. in newly built areas. This could also include travel information for vulnerable and disabled people which could then help provide appropriate service or infrastructure by transport authorities to improve user experience.*

THE WAY FORWARD

Applying bus regulation to HARPS

8.96 Most consultees agreed with the principle that if HARPS operated in a way which was functionally equivalent to a bus service, they should be subject to bus regulation on issues such as franchising, route registration and punctuality.

8.97 At present, our view is that HARPS would be regulated as a local bus service if it:

- (1) is capable of carrying more than 8 passengers at a time;
- (2) charge separate fares;
- (3) does not fall within an existing exemption (applying to group arrangements, school buses, rail replacement bus series, excursions and community groups); and
- (4) meets the “local” definition, allowing passengers to alight within 15 miles of where they board.

- 8.98 This current definition may not be appropriate in the future. We are grateful to consultees for their detailed responses, indicating some of the tensions and controversies in how the UK currently regulates bus services. Bus regulation is set to change, as transport authorities take greater control of their transport mix, to meet the challenges posed by climate change and air pollution. And, of course, since our consultation closed, new challenges have arisen: how do we protect bus drivers and maintain social distancing on public transport while attempting to re-ignite the economy after lockdown?
- 8.99 Consultation Paper 3 will make proposals for the outline of new legislation on automated vehicles. We need to ensure that any definition of a bus service is not stuck in an outdated view. This would suggest that the issue of when a HARPS falls within franchising, registration and punctuality requirements is best left to a regulation-making power.

A statutory partnership scheme

- 8.100 Most consultees (74%) supported the idea of a statutory scheme to promote collaboration between HARPS operators. In outline, this would mean that where authorities provided facilities to HARPS (such as waiting space near stations) they could impose standards (in particular, participation in an integrated ticketing scheme).
- 8.101 There was particular support for schemes which made it easy for consumers to plan and book journeys on a single platform. However, there was also concern about making schemes mandatory. It was not our intention that platforms would be mandatory for all operators. Some will have particular business models (such as providing services to particular groups) which did not lend themselves to booking through a digital platform. Instead, we proposed a collaborative approach. Where HARPS formed part of the transport authority's planned transport mix (and were provided with benefits as a result), the authority should have the power to impose requirements, including participating in ticketing schemes.
- 8.102 We set out the idea only in the broadest of outlines. There are many sorts of standards which might be imposed on operators (including obligations to be accessible and to provide data on travel and road conditions), and many possible facilities which might be provided (such as parking and priority lanes, charging facilities, and depots). As TfL highlighted, local and regional transport authorities have a fundamental role in shaping new transport services to the needs of their regions and cities. The content of such schemes will therefore be a matter for local authorities to determine as they meet the needs of their local areas. The policy questions regarding promoting collaboration between HARPS operators and transport authorities are closely related to the regulatory toolbox available to transport authorities to ensure HARPS meet local needs, as discussed in Chapter 7.
- 8.103 Our current, tentative thinking is that any new legislation on HARPS should make some provision for partnership schemes. We accept that we are not in a position to design the content of such schemes. That will be a matter for transport authorities when they are faced with the reality of HARPS in their area. We look forward to further engagement with transport authorities and others to consider how legislation might set out the broad outline of such schemes.

Annex 1: Respondents

ABI and Thatcham (joint response)
Alford, Chris (personal response, associated with University of the West of England, Bristol)
Amey Consulting
Anxiety UK
Association of Local Bus Managers (ALBUM)
Association of Personal Injury Lawyers (APIL)
Autonomous Intelligent Driving GmbH (AID GmbH)
Aviva
Aviva Future Mobility Legal Working Group
AXA (a joint response from AXA UK and AXA XL)
Bar Council
BLM LLP
Bosch
Bradshaw-Martin, Heather (personal response, associated with Humanity in Motion Ltd and Perkins Engines Company Ltd)
British Insurance Brokers' Association (BIBA)
British Parking Association (BPA)
British Vehicle Rental and Leasing Association (BVRLA)
Buchanan Computing Ltd and the Institute of Highway Engineers (IHE) (joint response)
Burges Salmon LLP
Campaign for Better Transport
Chartered Institution of Highway and Transportation (CIHT)
Community Transport Association (CTA)
Confederation of Passenger Transport (CPT)
Connected Places Catapult (CPC)
Costain
Crown Prosecution Service (CPS)
DAC Beachcroft LLP
Disability Equality Scotland
Disabled Motoring UK
Disabled Persons Transport Advisory Committee (DPTAC)
Economides, George (personal response, associated with Oxfordshire County Council)
Equality and Human Rights Commission (EHRC)
Faculty of Advocates
Five
Freight Transport Association (FTA)
Gemserv Limited
Glassbrook, Alex; Northey, Emma; Milligan, Scarlett; Erdunast, Paul; and Peto, Harry (personal joint response, barristers associated with Temple Garden Chambers)
GoBike
Goggo Network
Hackney Living Streets
Hatton, Dean (personal response, associated with National Police Chiefs' Council (NPCC))
HORIBA MIRA
Horwich Farrelly

Humanising Autonomy
IAM RoadSmart
Independent Disability Advisory Group (IDAG)
Institute and Faculty of Actuaries
Intel Corporation (and Mobileye, an Intel Corporation company)
International Underwriting Association of London (IUA)
ITS United Kingdom (ITS UK)
Kennedys Law LLP
KPMG LLP
Law Society of England And Wales
Law Society of Scotland
Lewisham Living Streets
Local Government Association (LGA)
London Living Streets
Maple Consulting Ltd
Mason, Stephen
Met Office
Metropolitan Police Service (MPS)
Mid & West Berkshire Local Access Forum (LAF)
Mills & Reeve LLP
Mobility and Access Committee for Scotland (MACS)
Morris, Richard (personal response, associated with Innovate UK)
Nominet
Office of the Traffic Commissioner
Oxbotica
P.Whitfield Consulting Ltd
Parkin, John (personal response, associated with University of the West of England, Bristol)
Parliamentary Advisory Counsel for Transport Safety (PACTS)
Percival, Richard and University of Sheffield law students
Pinsent Masons LLP
Police Scotland
RAC
RAC Foundation
Rainbird, John
Reed Mobility
Reimer, Bryan (personal response, associated with Massachusetts Institute of Technology (MIT))
Road Haulage Association Ltd (RHA)
Royal Society for the Prevention of Accidents (RoSPA)
Safe Kids Worldwide
Sarginson, Richard
Scottish Association for Public Transport (SAPT)
Scottish Trade Union Congress (STUC)
Senators of the College of Justice
Smart Mobility Unit, University of Hertfordshire
Society of Motor Manufacturers and Traders (SMMT)
Stagecoach Bus Group
Stagecoach Group plc
Staunton, Garry (personal response, associated with UK Atomic Energy Authority (UKAEA))
Stevenage Borough Council

Stewarts Law LLP
Sustrans
Suzy Lamplugh Trust
Thompsons Solicitors LLP
Tim Marlow Ltd
Transform Scotland
Transport Canada
Transport for Greater Manchester (TfGM)
Transport for London (TfL)
Transport for West Midlands (TfWM)
Uber
UK Bus Division of FirstGroup plc (FirstGroup plc)
UK Computing Research Committee
Urban Transport Group
Wayve
WMG, University of Warwick
XPI Simulation Ltd