31 December 2018

Department of Infrastructure, Regional Development and Cities
GPO Box 594
Canberra ACT 2601

<u>                                            </u>

## RE: THIRD FIVE YEAR REVIEW OF THE DSAPT

The Australian Taxi Industry Association (ATIA) is the national peak representative body for the taxi services industry and more broadly, the personalised transport sector[1] in Australia.  Its membership comprises taxi networks, operators, licence owners, drivers and the following State/Territory industry representative bodies –

- Taxi Council of Queensland;
- Taxi Council South Australia;
- Tasmanian Taxi Council; and
- Canberra Taxi Industry Association.

Accordingly, the ATIA represents on a national basis, the major taxi stakeholder groups within the personalised passenger transport sector.  For context, the taxi services industry comprises over 70,000 small, medium and large businesses.

The ATIA has an established and demonstrated interest in the Disability Standards for Accessible Public Transport 2002 (DSAPT).  The ATIA has been an active member of the National Accessible Public Transport Advisory Committee (NAPTAC), and its predecessor the Accessible Public Transport National Advisory Committee (APTNAC), from their respective inceptions.  The ATIA has also been an active member of NAPTAC/APTNAC subcommittees, including the DSAPT Modernisation Steering Committee (DMC) and the National Scooter Policy Working Group.

The ATIA has a well demonstrated interest in promoting appropriate, effective and efficient reforms for the DSAPT as evidenced by ATIA's contributions through the DMC and its substantive submissions to the two previous 5 year reviews of the DSAPT (i.e. the 2007 and 2012 reviews).

The ATIA's submission to the current third review of the DSAPT (the Review), will firstly discuss a number of assumptions and caveats, then address the questions posed to operators/providers in the Review's Issues Paper dated August 2018 (the Issues Paper), and lastly conclude with eight (8) recommendations.

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[1] New service offerings from the Gig Economy have resulted in a restructuring of the traditional taxi and limousine / hire car (with driver) sector and its renaming in NSW as the Point-to-Point Transport sector, in VIC and the NT as the Commercial Passenger Vehicle sector, in QLD as the Personalised Transport sector, and in WA and TAS as the On-demand (Passenger) Transport sector.  This paper adopts the term *personalised transport* sector.

## ASSUMPTIONS AND CAVEATS

This paper assumes that meeting the DSAPT targets for 31 December 2017 necessarily includes meeting the DSAPT targets that became applicable from 31 December 2012 and 31 December 2007 (i.e. that the DSAPT targets are progressive and cumulative).

Accordingly, this paper considers that the most relevant targets for the personalised transport sector in relation to the DSAPT for 31 December 2017 are –

- 100% of signs (i.e. raised taxi registration numbers externally on passenger doors) from 31 December 2007;

- 100% of response times for accessible taxis (i.e. to be the same as other taxis) from 31 December 2007;

- 100% of 1500mm minimum head room and vertical door opening (i.e. for new accessible taxis) from 31 December 2012;

- 90% of manoeuvring areas (i.e. on-board manoeuvring areas in accessible taxis allow equivalent access, including by direct assistance to passengers) from 31 December 2017; and

- 90% of allocated space (i.e. at least 1 allocated space in accessible taxis) from 31 December 2017.

This paper considers the deliberations of Justice Griffiths in the Federal Court case, "Uber B.V. v Commissioner of Taxation [2017] FCA 110", to be informative of the meaning of the term "taxi" for the purposes of the DSAPT. Relevantly, Justice Griffiths explicitly rejected the proposition (by the Applicant) that "taxi" be given a regulatory or a trade meaning, deciding in favour of "taxi" being given its ordinary meaning in A New Tax System (Goods and Services Tax) Act 1999 (the GST Act). Amongst other matters, his Honour concluded that the Commonwealth Parliament at the time of passing the GST Act –

- could not reasonably have had in mind a regulatory definition for "taxi" because none existed at the Commonwealth jurisdictional level (i.e. regulatory definitions differed from State to State);

- could not reasonably have had in mind a trade definition for "taxi" because none existed at the Commonwealth jurisdictional level (i.e. trade definitions differed from State to State reflecting the regulatory differences);

- had no reason to invent, further develop or newly define a meaning for the word "taxi"; and so must have

- adopted the ordinary meaning of the word "taxi", namely "*a vehicle available for hire by the public and which transports a passenger at his or her direction for the payment of a fare that will often, but not always, be calculated by reference to a taximeter*"[2].

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[2] *Cl 135 of the Honourable Justice Griffiths Reasons for Judgement on 17 February 2017 re "Uber B.V. v Commissioner of Taxation [2017] FCA 110.*

Applying exactly the same logic and interpretation principles as Justice Griffiths used to conclude that ridesourcing services were encompassed within the broader term of taxi services for the GST Act, this paper considers ridesourcing vehicles to be encompassed within the term taxis for the DSAPT.

Accordingly, this paper considers that "taxi" within the DSAPT, properly includes the following conveyances on a State by State basis –

- Queensland: taxis and booked-hire vehicles (*but not licenced limousines*);

- New South Wales: taxis and hire cars (*excluding luxury hire cars*);

- Victoria: commercial passenger vehicles (*excluding luxury CPVs*);

- Australian Capital Territory: taxis and rideshare vehicles (*but not licenced hire cars*);

- South Australia: taxis and rideshare vehicles (*but not chauffeur and special purpose vehicles*);

- Western Australia: taxis and small charter/ridesourcing vehicles (*but not limousines*);

- Tasmania: taxis and rideshare vehicles (*but not private hire cars or limousines*).

The ATIA considers the rationale articulated in the SAE International's "*Taxonomy and Definitions for Terms Related to Shared Mobility and Enabling Technologies*"[3] to be robust and compelling. Relevantly for the Commonwealth Government, the taxonomy is consistent with the Australian Taxation Office's preferred terminology for taxis and ridesourcing.

Adopting the rationale of Justice Griffiths and the SAE International's taxonomy, this paper will hereafter use[4] –

1. "*TAXIS*" when referring to the DSAPT's use of the term taxis (i.e. encompasses ride-sourcing vehicles);

2. "*taxis*" when referring to the subclass of the personalised transport sector that the taxonomy defines as taxis; and

3. "*ridesourcing*" when referring to the subclass of the personalised transport sector that the taxonomy defines as ridesourcing vehicles and/or services.

## ISSUES PAPER

The ATIA offers the following comments in regard to the three questions posed to operators, providers and their representative organisations in Section A of the Issues Paper.

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[3] *See Attachment A*

[4] *but not use the word "ridesharing" given that term is properly reserved for non-commercial carpooling / van pooling vehicles (as per the taxonomy)*

*1. Have you been able to meet the 2017 Transport Standards legislated targets? If not, can you elaborate on the reasons for not being able to meet these targets?*

| DSAPT TARGETS | TAXIS | |
|---|---|---|
| | *taxis* | *ridesourcing* |
| 1.1 Signs | 100% compliance | Nil compliance |
| 1.2 Response Times | Data unavailable | Nil compliance |
| 2.2 Head Room / Door Opening | 100% compliance | Nil compliance |
| 3.1 Manoeuvring Areas | 100% compliance | Nil compliance |
| 3.1 Allocated Space | 100% compliance | Nil compliance |

The zero compliance by *ridesourcing* vehicles/services can in large measure be attributed to *ridesourcing* operators simply ignoring their obligations under Disability Discrimination Act 1992 and the DSAPT to provide wheelchair accessible services. Of concern, it appears to the ATIA that State and Territory Governments have been complicit in this failure. All of these Governments regulated into existence a new form of small vehicle public passenger transport service without concern or regard for the likely inaccessibility of the service on-road given the known providers' performances in other jurisdictions. With the possible exception of the Victorian Government on mere technicality (rather than on substance), they distinguished and separated *ridesourcing* from *taxis* within their respective personalised transport markets and so promoted a regime whereby accessible *taxis* would inescapably be required to substitute for inaccessible *ridesourcing* vehicles. A proposition expressly to be prohibited under the DSAPT[5].

The ATIA is unfortunately unable to quantify the level of compliance by *taxis* for the DSAPT response time target. However, please see ATIA's comments below in response to question 2.

*2. Are there requirements that have proven to be impractical or difficult to implement? If so, please specify these.*

In the ATIA's submissions to the 2007 and 2012 DSAPT reviews, ATIA advised that it was not possible for *taxi* networks[6] to ensure equal response times for wheelchair accessible *taxis* (WATs) and other *taxis*. *Taxi* networks simply do not exercise control over a number of critical elements in the service supply chain. They are therefore in no position to assume full or sole responsibility for actual response times of either WATs or other *taxis*.

*Taxi* networks do not control the number or proportion of WATs affiliated with their fleet or the price(s) of WAT services. These are factors that fall under the under the regulatory control of respective State and Territory governments. As an extension of this point, in some jurisdictions, State and Territory governments have established centralised booking/dispatching agencies for WAT jobs (e.g. ACT, SA) that remove all capacity of

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[5] *As per cl 33.7, "Methods of Providing Equivalent Access" in the Disability Standards for Accessible Public Transport Guidelines 2002*

[6] *In this paper, "networks" means the same as terms, "Radio networks" and "Co-operatives" within the DSAPT*

*taxi* networks to discharge their DSAPT obligations and/or comply with the DSAPT response time target[7].

*Taxi* networks also do not have (and therefore cannot exercise) line or other directive control over *taxi* drivers or *taxi* operators. *Taxi* drivers and *taxi* operators are affiliates of *taxi* networks. They pay their respective *taxi* network directly, or indirectly, for services they receive (i.e. the brokering services). Their relationship is therefore akin to being customers of the network. Accordingly, *taxi* networks have no head of power legally to compel a *taxi* driver to –

- station his/her WAT in an area proximate to where wheelchair jobs could be expected to originate (i.e. to minimise the lead or travel time to the customer); or

- not station his/her WAT in an area inconvenient to where wheelchair jobs could be expected to originate (e.g. in the remote holding and *taxi* feeder areas at airports); or

- accept a wheelchair job that is offered via the dispatch system (except in Queensland).

This last set of points is very important. *Taxi* drivers are in no way employees of *taxi* networks but rather are self-employed independent business owners irrespective of whether they merely bail the *taxi* (e.g. as a *bailee* driver) or own the *taxi* (e.g. as an *owner* driver). *Taxi* drivers cooperate with *taxi* networks when it is convenient or in their economic interests to do so but at all times ply-for-hire autonomously.

*Taxi* networks' primary business is that of a booking and dispatch centre that acts as a brokering agent for its affiliated fleet, receiving booking requests from customers using a range of technologies and then dispatching those booking requests according to an agreed set of rules and parameters. Importantly, the booking request acceptance and dispatch components of *taxi* services, the elements of the *taxi* service supply chain that are under the direct control of *taxi* networks, are provided without discrimination.

Notwithstanding their best efforts, *taxi* networks cannot guarantee and therefore cannot reasonably be held accountable for, WAT response times that may differ from other *taxi* response times. Causes for inferior WAT response times that are outside the control of *taxi* networks include –

- asynchronous peak times for the WAT fleet vis-à-vis the conventional *taxi* fleet (e.g. morning and afternoon WAT peaks associated with "school runs" transporting students with disability);

- traffic and road conditions en route to customers' pickup points (i.e. WAT jobs typically have longer "run to customer" distances which increase the propensity for them to be affected by en route traffic and road conditions).

- an undersupply of WATs in the fleet vis-à-vis other *taxi* licences (i.e. the State/Territory government has issued insufficient WAT licences);

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[7] *i.e. only the centralised booking agency can accept and dispatch WAT jobs.*

- an oversupply of other *taxis* in the fleet vis-à-vis WATs (i.e. the State/Territory government has issued too many other *taxi* licences); and/or

- an underutilisation of the WAT fleet doing wheelchair jobs (e.g. the State/Territory government's regulatory enforcement program failing to ensure WATs comply with licence conditions that require consistent preference be given to wheelchair jobs over other *taxi* work, or the nearest available WAT driver not accepting a wheelchair job on a consistent basis).

The ATIA notes that the 2007 and 2012 DSAPT reviews accepted that the WAT response times target was not fit for purpose. Unfortunately, the various working groups that were subsequently tasked with identifying a replacement target, or set of targets, have to date not been successful.

 3. *Can you provide detail of any initiatives and actions you have undertaken, not currently detailed under the Transport Standards or other legislative requirements, in relation to removing discrimination against people with disability?*

The ATIA is aware of *taxi* networks, operators and drivers adopting a range of new technologies and strategies to improve the accessibility of services for people with disability, such as -

- Improvements to WAT driver training, including development of a specific national training competency;

- Improvements to *taxi* driver training in relation to providing services to people with disability, including the participation of organisations such as Guide Dogs Australia and Spinal Injuries Associations in course delivery and content development;

- Development and distribution of education material for/to *taxi* drivers explaining their obligations in relation to the DSAPT and providing services to people with disability;

- Implementation of dispatching protocols that restrict WAT drivers from accessing other jobs, especially high occupancy jobs, while WAT jobs are holding;

- Implementation of affiliation rules or regulations that prevent WATs from making themselves unavailable for dispatch jobs while plying for rank/hail work;

- Implementation of wheelchair job quotas (per day/week/month) with responsibility placed on the WAT driver, operator and/or licence owner;

- Implementation of affiliation rules or regulations that establish monetary or other penalties for WAT jobs rejected (not accepted) by drivers;

- Improved subsidies to WAT drivers to compensate for extra embarkation/disembarkation time and "running" to the customer associated with WAT jobs;

- Implementation of on-time bonuses for WAT drivers where WAT jobs are serviced within benchmark response times;

- Implementation of incentives for WAT drivers for WAT jobs that require special attention (e.g. to cover jobs with difficult or problematic pick-up locations);

- Deployment of new taximeters that have an audio function to assist people with sight impairment to hear the fare payable at the end of the journey;

- Improvements to smartphone booking apps to improve the transactional experience for people with hearing impairments; and

- A general trend to replacing ramp accessible vehicles with hydraulic hoist accessible vehicles. (Hoist accessible vehicles typically have an allocated space that can accommodate two (2) wheelchairs or similar mobility aids rather than the single requirement in the DSAPT. They also provide safer operation for both passengers and drivers in a wider range of terrain and weather conditions than ramp accessible vehicles.)

**RECOMMENDATIONS**

1) *The DSAPT should be amended to require facility and venue owners (including governments of all levels) where they establish restrictions limiting the assistance that taxi drivers may otherwise necessarily provide to passengers with disability, to make adequate and timely provision for same using their own resources (e.g. airports).*

2) *The DSAPT and Australian Road Rules should be amended to require/promote State and Territory Governments (and other road owners) to make adequate and flexible provision for taxis to be able to set-down and pick-up passengers with disability, anywhere safe to do so, as close to their destination or origin as physically possible (e.g. anywhere other than within 20 meters on the approach side of an intersection controlled by traffic lights or 10 meters of any other intersection).*

3) *The DSAPT and Australian Road Rules should be amended to require/promote State and Territory (and other road owners) to allow taxis to use transit lanes, bus lanes, bus ways and bus stops when transporting passengers with disability.*

4) *The DSAPT should be amended such that "response times" in Schedule 1 Part 1 1.2 be defined only in terms of the supply chain elements under the control of a taxi network (e.g. the sum of the time taken to process the booking and offer it for dispatch to the affiliated WAT fleet).*

5) *The DSAPT should be amended by inclusion of a new target, or targets, for other elements of the WAT supply chain that are not under the control of taxi networks. (The new target(s) to be given a fair, reasonable and prospective compliance date.)*

6) *The DSAPT should be amended to remove references to obsolete and/or irrelevant technologies and business structures (e.g. "radio networks", "co-operatives").*

7) *The Commonwealth Government should establish a national certification system for the labelling/tagging of mobility aids according to their suitability for transportation*

*in all public passenger vehicles (trains, buses, taxis etc) which includes standard marking/identification of mobility aids' (engineered) safe anchorage points.*

8) *The DSAPT should be amended to clarify the meaning of taxi vis-à-vis ridesourcing for the purposes of the Standards and clarify how ridesourcing operators can remove discrimination from their services. In ATIA's view, this may simply be accomplished by the DSAPT –*

   a) *referencing and adopting the SAE International's taxonomy and definitions in Attachment A (as it does for various Australian Standards); and*

   b) *explicitly adding -*

      i) *"ridesourcing vehicles" to the public transport conveyances listed in 1.12(1) as subject to the DSAPT[8] and the conveyances list in 17.7 and Schedule 1 Part 1 1.2 (or a duplicate of Schedule 1 Part 1 1.2 with a fair, reasonable and prospective compliance date);*

      ii) *"accessible ridesourcing vehicles" to the conveyances list wherever accessible taxis are mentioned – i.e. 3.3, 9.2, 9.9, 12.5, Schedule 1 Part 2 2.2 (or a duplicate of Schedule 1 Part 2 2.2 with a fair, reasonable and prospective compliance date);*

      iii) *the words "and ridesourcing vehicle" to each mention of "taxi" in 17.7; and*

      iv) *"ridesourcing platforms" to the responsibility list Schedule 1 Part 1 1.2 (or a duplicate of Schedule 1 Part 1 1.2 with a fair, reasonable and prospective compliance date) – notwithstanding recommendations 4 and 5 above propose substantive revisions for Schedule 1 Part 1 1.2.*

## CONCLUSION

The intent and aspiration of the DSAPT is remove discrimination from the provision of public transport services. The ATIA very much supports that intent and aspiration and so does the *taxi* industry as a subset of the broader personalised transport sector.

However, market forces currently operating in the broader personalised transport sector are making it extremely difficult for *taxi* operators to viably sustain that commitment. In ATIA's view it is both unfair and contrary to the intention of the DSAPT that one category of public transport providers should bear the burden of removing discrimination for the benefit and commercial advantage of any other category, and most certainly not a category that operates as a close substitute and in direct competition. However this is exactly what is happening under the regulatory regimes established by State and Territory Governments in regard to TAXI services with all of the *ridesourcing* platforms operating without any wheelchair accessible vehicles in their fleets anywhere in Australia.

The regulatory distortion and burden impacting *taxis* is real and material. For example, the new or replacement cost of a WAT is in the vicinity of $80,000 while the cost of a comparable non-accessible sedan *taxi* is in the order of $20,000-$25,000. It is simply unrealistic to believe that *taxi* operators can continue to bear such cost burdens in challenging market conditions and especially where their competitive counterpart *ridesourcing* operators can apparently get away with ignoring and/or avoiding them.

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[8] *i.e. removing any doubt as to whether they are otherwise included as (d) in taxis or (f) any other rolling stock*

Similarly, it makes no sense that every *taxi* must have raised identification numbers affixed to their passenger doors while *ridesourcing* vehicles have to date apparently been allowed to ignore and/or avoid the requirement.  In the ATIA's view, addressing these regulatory anomalies must be an urgent priority for the Review.

Finally, should you require any further information or clarification in regard to any matter raised in this letter, please do not hesitate to contact me directly on (07) 3339 3196.

Yours sincerely

Blair Davies
Chief Executive Officer
Australian Taxi Industry Association

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| | | Issued | 2018-09 |
| | Taxonomy and Definitions for Terms Related to Shared Mobility and Enabling Technologies | | |

## RATIONALE

Standardizing definitions of shared mobility and supporting terms serves several purposes:

- It will help reduce traveler uncertainty regarding shared mobility services, confusion about terminology used by the media, and discrepancies in terminology used internationally that contribute to public confusion and misperceptions.

- It will allow public agencies to clarify policies related to shared mobility, such as insurance, taxation, rights-of-way, parking, and zoning.

- It will help unify public and private sector definitions and aid in the development of services, as well as the formation of public-private partnerships.

This document has been developed according to the following guiding principles. It should:

- Be descriptive and informative rather than normative;

- Provide functional definitions;

- Be consistent with current industry practice;

- Be consistent with existing literature to the extent practicable;

- Be useful across disciplines including: engineering, planning, law, and journalism;

- Be clear and cogent and, as such, it should avoid or define ambiguous terms;

- Address inconsistencies in overlapping work and competing definitions in the field of shared mobility to achieve standardization; and

- Not provide any competitive advantage for any particular shared mode or service provider.

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## 1. SCOPE

This Recommended Practice provides a taxonomy and definitions for terms related to shared mobility and enabling technologies. Included are functional definitions for shared modes (e.g., carsharing, bikesharing, ridesourcing, etc.). Public transit services and other incumbent services—such as car rentals, shuttles, taxis, paratransit, ridesharing (carpooling/vanpooling), and pedicabs—are also included in the ecosystem of shared mobility services. This Recommended Practice also provides a taxonomy of related terms and definitions (e.g., station-based roundtrip, free-floating one-way, etc.). This Recommended Practice does not provide specifications or otherwise impose requirements on shared mobility.

NOTE:  At the time of this writing, Mobility on Demand (MOD) and Mobility as a Service (MaaS) are evolving concepts that could be defined in a future revision.

## 2. REFERENCES

### 2.1 Applicable Documents

The following publications form part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

### 2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606- 7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J3016        Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles

### 2.1.2 American Planning Association

Available from the American Planning Association, 205 North Michigan Avenue, Suite 1720, Chicago, IL 60601, Tel: +1 312-431-9100, www.planning.org.

[1]        Cohen, Adam, and Susan Shaheen. 2016. Planning for Shared Mobility. Available at https://www.planning.org/publications/report/9107556/.

### 2.1.3 U.S. Department of Transportation

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### 2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

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## 3. ABBREVIATIONS

B2B                Business-to-Business

B2C                Business-to-Consumer

B2G                Business-to-Government

CNS                Courier Network Services

P2P                Peer-to-Peer

P2P-GDM            Peer-to-Peer Goods Delivery Marketplace

P2P-MM             Peer-to-Peer Mobility Marketplace

## 4. SHARED MOBILITY

Shared mobility is defined as the shared use of a vehicle, motorcycle, scooter, bicycle, or other travel mode; it provides users with short-term access to a travel mode on an as-needed basis [3].

NOTE 1:  Shared mobility includes various travel modes and service models that meet the diverse needs of users. Shared mobility can include station-based roundtrip services, station-based one-way services, and free-floating one-way services.

NOTE 2:  Shared mobility services that employ motor vehicles may also include vehicles equipped with automation, as described in SAE J3016.

NOTE 3:  Sharing can include (1) sequential sharing (i.e., different users sharing the same transportation vehicle or equipment, one after the other), and (2) concurrent sharing (i.e., sharing of the same transportation vehicle or equipment by multiple non-household users for the same trip).

NOTE 4:  Shared mobility services may be membership-based, non-membership-based, peer-to-peer (P2P), and for-hire.

NOTE 5:  Shared mobility also includes public transit services and incumbent services, such as car rentals, shuttles, taxis, paratransit, ridesharing (carpool/vanpool), and pedicabs.

NOTE 6:  Shared mobility also includes business-to-consumer (B2C), business-to-government (B2G), business-to-business (B2B), and peer-to-peer mobility marketplace (P2P-MM) business models.

## 5. TRAVEL MODES

Shared mobility includes various travel modes to meet the diverse needs of users. This section describes an array of shared travel modes that are a part of the shared mobility ecosystem.

### 5.1  Alternative Transportation Services

"Alternative transportation services" is a broad category that includes multi-occupant modes such as shuttles, vans, and small busses, as well as paratransit and microtransit services. Alternative transportation services are differentiated from public transit services by the lower volume of individuals moved on average per trip. In some contexts, alternative transportation services may also be referred to as "demand responsive transport" [1].

NOTE:  See below for definitions of microtransit and shuttles.

## 5.2    Bikesharing

Bikesharing provides users with on-demand access to bicycles at a variety of pick-up and drop-off locations for one-way (point-to-point) or roundtrip travel. Bikesharing fleets are commonly deployed in a network within a metropolitan region, city, neighborhood, employment center, and/or university campus.

NOTE:  Definition of "bikesharing" is partially amended from [1] and [3].

## 5.3    Carsharing

Carsharing offers members access to vehicles by joining an organization that provides and maintains a fleet of cars and/or light trucks. These vehicles may be located within neighborhoods, public transit stations, employment centers, universities, etc. The carsharing organization typically provides insurance, gasoline, parking, and maintenance. Members who join a carsharing organization typically pay a fee each time they use a vehicle [3].

NOTE:  The term "car club" is often used in the United Kingdom and New Zealand to refer to a carsharing organization.

## 5.4    Courier Network Services (CNS)

CNS provide for-hire delivery services for monetary compensation using an online application or platform (such as a website or smartphone app) to connect couriers using their personal vehicles, bicycles, or scooters with freight (e.g., packages, food, etc.) [3], [4]. CNS are also referred to as flexible goods delivery.

## 5.5    Microtransit

Microtransit is defined as a privately or publicly operated, technology-enabled transit service that typically uses multi-passenger/pooled shuttles or vans to provide on-demand or fixed-schedule services with either dynamic or fixed routing [1].

NOTE 1:  Between January and February 2018, the SAE Shared and Digital Mobility Definitions Task Force (hereinafter referred to as "Task Force") received feedback from Members and industry stakeholders, including two presentations regarding the definition and use of the term "microtransit" (or on-demand transit). Based on these presentations, it was determined by consensus of the Task Force that the term "microtransit" could include both private-sector and public-sector services and either (1) fixed-route or flexible-route/dynamic coverage, or (2) fixed-schedule or on-demand operations.

NOTE 2: The term "flexibus" is a colloquial term that can be used to describe a microtransit service that includes a fixed route but can flexibly modify its route to pick-up or drop-off passengers at locations near but not directly on its route when demand and operations permit.

## 5.6    Pedicabs

Pedicabs are for-hire services in which a cyclist (or "pedaler") transports users on a cycle containing three or more wheels and a passenger compartment [3].

## 5.7    Personal Vehicle Sharing

Personal vehicle sharing is defined as the sharing of privately owned vehicles, where companies broker transactions between vehicle hosts and guests by providing the organizational resources needed to make the exchange possible (e.g., technology, customer support, driver and motor vehicle safety certification, auto insurance, etc.). This model also includes P2P carsharing, P2P marketplace, hybrid B2C and P2P models, and fractional ownership [3].

## 5.8    Ridesharing

Ridesharing (also known as carpooling and vanpooling) is defined as the formal or informal sharing of rides between drivers and passengers with similar origin-destination pairings. Ridesharing includes vanpooling, which consists of 7 to 15 passengers who share the cost of a van and operating expenses, and may share driving responsibility [1], [3].

NOTE:   Between January and February 2018, the Task Force received feedback from Members and industry stakeholders including three presentations regarding the legal definitions and use of the term "ridesharing." Based on these presentations, it was determined by the Task Force that the term "ridesharing" should not be used to describe for-hire vehicle services (e.g., ridesourcing services and taxis), at present, even when pooled due to the commercial nature of the services. The Task Force discussed differences pertaining to the compensated and non-compensated pooled trips and the existing legal definitions for carpooling and vanpooling. It was acknowledged that this space is evolving rapidly, and the Task Force will continue to monitor developments and adjust definitions, as appropriate, in the future.

## 5.9   Ridesourcing

Ridesourcing services are prearranged and on-demand transportation services for compensation in which drivers and passengers connect via digital applications. Digital applications are typically used for booking, electronic payment, and ratings. [1], [3].

NOTE 1:  Ridesourcing services are not allowed to street hail (on-demand does not include street hail).

NOTE 2:  Please see note on ridesharing in 5.8.

NOTE 3:  The term compensation shall denote a service that charges a fare above the actual cost of driving.

## 5.10   Scooter Sharing

Scooter sharing allows individuals access to scooters by joining an organization that maintains a fleet of scooters at various locations. Scooter sharing models can include a variety of motorized and non-motorized scooter types. The scooter service provider typically provides gasoline or charge (in the case of motorized scooters), maintenance, and may include parking as part of the service. Users typically pay a fee each time they use a scooter. Trips can be roundtrip or one way.

NOTE:  Definition of "scooter sharing" is partially amended from [1] and [3].

## 5.11   Shuttles

Shuttles are shared vehicles (typically vans or buses) that connect passengers from a common origin or destination to public transit, retail, hospitality, or employment centers. Shuttles are typically operated by professional drivers, and many provide complimentary services to the passengers.

## 5.12   Taxis

Taxi services provide prearranged and on-demand transportation services for compensation through a negotiated price, zone pricing, or taximeter (either traditional or GPS-based). Passengers can schedule trips in advance (booked through a phone dispatch, website, or smartphone app), street hail (by raising a hand on the street, standing at a taxi stand, or specified loading zone), or e-Hail (by dispatching a driver on-demand using a smartphone app).

NOTE:  Definition of "taxis" is partially amended from [1] and [3].

## 6.   MOBILITY APPLICATIONS

Mobility apps include an array of services that assist users in planning or understanding their transportation choices and may increase their access to alternative travel modes. There are eight subcategories of mobility apps, including:

## 6.1   Business-to-Consumer (B2C) Sharing Apps

B2C sharing apps sell access to shared transportation vehicles, equipment, and services from a business to an individual consumer, including one-way and roundtrip sharing [4].

## 6.2   Mobility Tracker Apps

Mobility tracker apps track a traveler's speed, direction, and elapsed travel time. These apps often include both wayfinding (guided directions) and fitness functions that are colored by metrics, such as caloric consumption while walking [4].

6.3     Peer-to-Peer (P2P) Sharing Apps

P2P sharing apps enable private owners of transportation vehicles or equipment (e.g., vehicles, bicycles, scooters, etc.) to share with other users generally for a fee [4].

6.4     Public Transit Apps

Public transit apps enable users to search public transit routes, schedules, near-term arrival predictions, and connections. These apps may also include booking, ticketing, and payment features for public transit services and other shared modes. Public transit apps that provide public transit information may be operated by a public transit agency or by a private sector provider [4].

6.5     Real-Time Information Apps

Real-time information apps provide users with up-to-date travel information across multiple modes, including current traffic data, public transit wait times, carsharing, bikesharing, and parking availability [4].

6.6     Ridesourcing Apps

Ridesourcing apps provide a platform for sourcing rides. This category is expansive in its definition and includes "ridesplitting" or "pooling" services, in which fares and rides are split among multiple strangers who are traveling in the same direction (see 5.9 for the definition of ridesourcing) [4].

6.7     Taxi e-Hail Apps

Taxi e-Hail apps provide Internet-based, location-aware, on-demand hailing of regulated city taxis (see 5.12 for a definition of taxis) [4].

6.8     Trip Aggregator Apps

Trip aggregator apps route users by considering multiple travel modes and providing users with optimal travel times, connection information, distance, and trip cost [4].

7.   SERVICE MODELS

Shared mobility includes multiple service models designed to meet diverse user needs. Shared mobility services may be public or private, membership-based or non-membership-based, peer-to-peer (P2P), for-hire, or public transit systems. These service model definitions are intended to describe how each mobility service is delivered to the traveler. Shared mobility service providers may offer more than one service type [3].

7.1     Membership-Based Service Models

Membership-based service models require that an individual or group of users sign up for membership to use a service. Examples include carsharing and membership-based bikesharing access [3].

7.2     Non-Membership Service Models

Non-membership service models do not require membership to use a service. Examples include casual bikesharing access, car rental, and casual carpooling [3].

NOTE: A number of shared modes (e.g., bikesharing) may offer both membership-based and non-membership service models.

## 7.3    Peer-to-Peer (P2P) Service Models

In P2P service models, private companies manage transactions (for a fee) between hosts and guests of an asset (e.g., a vehicle, bicycle, or other mode) by providing the organizational resources needed to make the exchange possible (i.e., customer support, driver and motor vehicle safety certification, auto insurance, and technology, etc.). One way that P2P services differ from membership-based services is that an individual owns the private asset being shared, rather than a business or organization.

NOTE:  Definition of "P2P service models" is partially amended from [3].

## 7.4    For-Hire Service Models

For-hire service models transport passengers for a fare (either predetermined by distance or time traveled, or dynamically priced based on a meter or similar technology). For-hire services include ridesourcing, taxis, limousines, liveries, or pedicabs. The fundamental basis of for-hire services involves a passenger hiring a person operating an asset (e.g., a driver or cyclist) for a ride. For-hire services can be prearranged through a reservation, or they can be booked on-demand through phone dispatch, street hail, or e-Hail using a website or smartphone app.

NOTE:  Definition of "for-hire service models" is partially amended from [3].

## 7.5    Public Transit Services

Public transit services include a variety of public transportation modes, such as buses, subways, ferries, light and heavy rail, high speed rail, and alternative transportation services [3].

## 8.    OPERATIONAL MODELS

The terms defined above inform the taxonomy of shared mobility. Central to this taxonomy are three operational models:

## 8.1    Station-Based Roundtrip

Vehicle, bicycle, or other travel mode is returned to its origin [1], [3].

## 8.2    Station-Based One-Way

Vehicle, bicycle, or other travel mode is returned to a different designated station location [1], [3].

## 8.3    Free-Floating One-Way

Vehicle, bicycle, or other travel mode can be returned anywhere within a geographic area [1], [3].

## 9.    BUSINESS MODELS

Shared mobility includes a variety of business models that are characterized by the different methods of commercial transactions used, such as marketing shared mobility directly to consumers, businesses, public agencies, or other institutions and user groups.

## 9.1    Business-to-Consumer (B2C) Services

B2C services provide individual consumers with access to business-owned and -operated transportation services, such as a fleet of vehicles, bicycles, scooters, or other travel modes. These services are typically provided through memberships, subscriptions, user fees, or a combination of pricing models [2].

## 9.2    Business-to-Government (B2G) Services

B2G services offer business-owned and operated transportation services to a public agency. Pricing may include a fee-for-service contract, a per-transaction option, or some other pricing model [2].

## 9.3    Business-to-Business (B2B) Services

B2B services allow businesses to purchase access to business-owned or government-owned and -operated transportation services, either through usage fees or a fee-for-service. This type of service is typically offered to employees to complete work-related trips [2].

## 9.4    Peer-to-Peer Mobility Marketplace (P2P-MM)

P2P-MM services offer a marketplace—usually as an online platform—to facilitate transactions among individual buyers and sellers of personally owned and operated mobility services, in exchange for a transaction fee [2].

## 9.5    Peer-to-Peer Goods Delivery Marketplace (P2P-GDM)

P2P-GDM services include courier network services, such as apps providing for-hire delivery for monetary compensation using an online application or platform (such as a website or smartphone app) to connect couriers using their personal vehicles, bicycles, or scooters with goods (e.g., packages, food, etc.) [2]. This can include two types of services:

### 9.5.1    Peer-to-Peer (P2P) Delivery Services

P2P delivery services are apps that enable private drivers to collect a fee for delivering cargo using their private vehicles [2].

### 9.5.2    Paired On-Demand Courier Services

Paired on-demand courier services are apps that allow for-hire ride services (as described in 7.4) to also conduct package deliveries [2].

## 9.6    Fractional Ownership

Fractional ownership allows individuals to sub-lease or subscribe to access a motor vehicle or other travel mode owned by a third party. These individuals have "rights" to the shared service in exchange for taking on a portion of the ownership expense [3].

## 10.  DEPRECATED TERMS

This section identifies certain deprecated terms that are clarified in this Recommended Practice, either because they are frequently misused, and/or they are functionally imprecise (and therefore misleading).

### 10.1   Ridesharing

Certain terms are sometimes used inconsistently or confusingly to characterize ridesourcing and ridehailing services. A for-hire vehicle service with one paid driver and one paying passenger is not considered ridesharing (or carpooling). While some ridesourcing services offer shared rides for more than one traveler, these services are referred to as "ridesplitting," "pooling," and "taxi sharing," the latter used to describe sharing a taxi cab.

NOTE:    Between January and February 2018, the Task Force received feedback from members and industry stakeholders, including three presentations regarding the legal definitions and use of the term "ridesharing." Based on these presentations, it was determined by consensus of the Task Force that the term "ridesharing" should not be used to describe for-hire transportation services (ridesourcing and taxis), even when pooled. Task Force consensus emerged around differences based on the compensatory and non-compensatory nature of pooled trips and existing legal definitions for carpooling and vanpooling.

11. NOTES

11.1  Revision Indicator

A change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of this document. An (R) symbol to the left of the document title indicates a complete revision of the document, including technical revisions. Change bars and (R) are not used in original publications, nor in documents that contain editorial changes only.


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