



SURFACE VEHICLE/AEROSPACE RECOMMENDED PRACTICE

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Taxonomy of On-Demand and Shared Mobility: Ground, Aviation, and Marine

RATIONALE

Standardizing definitions of shared ground, aviation, and maritime services serves several purposes. It will:

- Help reduce traveler uncertainty regarding mobility services, confusion about terminology used by the media, and discrepancies in terminology used internationally that contribute to public confusion and misperceptions.
- Allow public agencies at all levels of government to clarify policies related to shared mobility services (ground, aviation, and marine).
- Help unify public and private sector definitions and aid in the development and deployment of services.

This SAE Recommended Practice has been developed according to the following guiding principles. It should:

- Provide functional definitions.
- Be consistent with current industry practice.
- Be consistent with existing literature to the extent practicable.
- Be useful across disciplines.
- 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 and on-demand mobility to achieve standardization.
- Not provide any competitive advantage for any particular shared mode or service provider.

1. SCOPE

This SAE Recommended Practice provides a taxonomy of terms related to local and regional on-demand and shared mobility services (including ground, aviation, and maritime) and their enabling technologies. Functional definitions for shared modes (both fleet sharing and ride services), services, business models, and mobility applications are defined in this SAE Recommended Practice. This SAE Recommended Practice also provides a taxonomy of related terms and definitions. Though public transport is part of shared mobility, it is not included in this SAE Recommended Practice because its definition is well-established and documented. This document does not provide specifications or otherwise impose requirements on on-demand and shared mobility.

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Documents

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2. REFERENCES

There are no referenced publications specified herein.

3. DEFINITIONS

3.1 ON-DEMAND

The ability to reserve or dispatch a service upon request by users.

3.2 CONCURRENT SHARING

Sharing of the same transportation vehicle, device, or service by travelers from different households and/or different traveling parties in a simultaneous manner.

3.3 SEQUENTIAL SHARING

Sharing of the same transportation vehicle, device, or service by travelers from different households and/or different traveling parties one after the other (i.e., in a sequential manner).

3.4 SERVICE AREA

Geographic area where the operation of a shared travel mode is allowed by either the mobility provider or regulatory agency.

3.5 SHORT-TERM

Access to a mode of transportation for a limited period of time that is generally less than a day and measured in small time increments, such as in minutes and/or hours.

4. CONCEPTS

4.1 Shared Mobility

The shared use of a travel mode that provides travelers with access to a transportation mode on an as-needed basis.

NOTE 1: Shared mobility can include a variety of shared ground, aviation, and maritime services.

NOTE 2: Shared mobility includes services also known as shared micromobility.

NOTE 3: Shared mobility services that employ motor vehicles may include those equipped with automation, as described in SAE J3016.

4.2 Shared Micromobility

The shared use of a bicycle, scooter, moped, or other low-speed vehicle or device that provides travelers with short-term access on an as-needed basis.

NOTE 1: Micromobility vehicles and devices may be propelled by a variety of power sources, including human, engine, or motor.

NOTE 2: Micromobility vehicles and devices that are partially or fully powered by a motor or engine are defined in SAE J3194.

4.3 Mobility on Demand (MOD)

A concept envisioning an interconnected and coordinated mobility ecosystem to meet the needs of all users by providing the safe, reliable, and efficient movement of travelers and goods. MOD offers users personalized mobility and goods delivery options upon request, matched with coordinated network strategies of service providers and operations managers.

NOTE: MOD is based on the principle that transportation is a commodity where options have distinguishable values.

4.4 Mobility as a Service (MaaS)

A concept envisioning integrated mobility where travelers can access multiple transportation modes over a single digital interface. MaaS primarily focuses on passenger mobility allowing travelers to seamlessly plan, book, and/or pay for travel on a pay-as-you-go and/or subscription basis.

4.5 Advanced Air Mobility (AAM)

A broad concept focusing on emerging aviation markets and use cases for urban, suburban, and rural operations. Advanced air mobility includes local use cases of about a 50 mile (80 km) radius in rural or urban areas, and intraregional use cases up to a few hundred miles.

NOTE 1: AAM includes shared aviation use cases (i.e., on-demand air mobility), defined in 6.1.1.

NOTE 2: Enabling technologies, such as unmanned aircraft systems (UAS) and unmanned traffic management (UTM) are not defined in this SAE Recommended Practice.

5. SHARED GROUND SERVICE DEFINITIONS

5.1 Fleet Sharing

Services that provide the traveler access to various types of shared vehicles or devices where the traveler is the operator.

5.1.1 Operational Models of Fleet Sharing

5.1.1.1 Free-Floating Model

An operational model in which a fleet of vehicles or devices that can be picked up and dropped off anywhere in the service area determined by the mobility provider and/or regulatory agency.

NOTE 1: "Free-floating" can also be referred to as "one-way" and "dockless."

NOTE 2: For shared micromobility, the ability to lock devices to street furniture (e.g., signs, bicycle racks, etc.) is another variation of the free-floating model. This variation of free floating shared micromobility is sometimes also referred to as the "lock to model."

5.1.1.2 Station-Based Model

An operational model in which a fleet of vehicles or devices that can only be picked up and dropped off at designated physical or digital stations within the service area determined by the mobility provider and/or regulatory agency.

NOTE 1: "Station-based" includes both one-way and roundtrip and can also be referred to as "docked."

NOTE 2: Physical stations can include painted boundaries designating pick-up and drop-off locations, sometimes also referred to as "corrals."

5.1.1.3 Hybrid Model

An operational model that blends characteristics of station-based and free-floating models that allows a fleet of vehicles or devices to be picked up and dropped off at either designated physical or digital stations and/or anywhere in the service area determined by the mobility provider and/or regulatory agency.