Model Mobility as a Service.
Aimsun Ride simulates Mobility as a Service (MaaS), Demand Responsive Transportation (DRT), and City Logistics applications.

Offered as a bundle of standard software, specially configured modules and professional services, Ride can help you develop a business case for running a service or connect your fleet management algorithms to our simulator, with interaction between your fleet and other road users.
Who can benefit from Ride?

Our team can help AI start-ups and MaaS operators to evaluate different business models and design and test different types of service. We can also advise transportation authorities or research groups on the potential impact of the move towards MaaS, or work out how MaaS and DRT could fit together with the wider public transportation system.

What can I test with Ride?

The combination of our robust, off-the-shelf simulation engines, an extensible software framework and our team of software and engineer experts, means we can set up models of any size for testing any kind of scenario, including but not limited to:

- Fixed routes, semi-fixed routes, or completely free ‘taxi-style’ routing
- Fixed timetables or purely on-demand requests, realtime or pre-booked
- Physical stops, virtual stops, or stop-anywhere
- Different fleet types and configurations
- Rides offered in isolation or combined with public transport as part of a holistic transportation model
- Algorithms for managing routes, scheduling departures, offering and operating user-pooling, and fleet redistribution
- Algorithms for generating different offers, pricing models, and target service levels
- Attractiveness levels of different types of service
- Competition between different providers or services
- Sensitivity to key input parameters, e.g., running multiple simulations with different assumptions on behavioral parameters.
Why use Ride?

In Ride, the demand-responsive vehicles are an overlay on regular traffic and interact fully with other road users. Ride is underpinned by dynamic simulation of all flavors of on-demand or flexible transportation services so you can see how congestion impacts your service. Model individual vehicle-to-vehicle interaction or use aggregate representations of a transportation network and demand. Test and refine your fleet management algorithms by connecting them with Ride’s API.

Work with travel requests based on individual agents with customizable parameters based on anything from age, gender, eco-friendliness or economic status. Understand how your offering fits into the mobility space and how it is likely to combine with and compete against alternative modes:

- Walking
- Public transportation: rail, metro, bus, tram...
- Taxi and ride hail operators
- On-demand buses and mini buses

Easy visualization:

- Identify patterns in travel demand
- Replay simulations to check the fleet’s movements in the network
- Extract network statistics for every user-defined interval, e.g. every 15 minutes
- Review individual travel requests and how they were served
The applications of Ride are endless; to take just one example, here is a workflow for modeling a mobility-on-demand solution:

Let’s assume that you want to test your fleet management algorithms or model the impact of congestion on service delivery or model different types of priority measure. You will need to observe the development of the demand and service delivery over the simulated period, interrogate the routing, and the spatial and temporal distribution of demand. Ride will give you vehicle utilization levels, passenger kilometers and system service levels.

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<tr>
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<td>• Receive request</td>
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<td>• Specific time</td>
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<td>• Individual and trip characteristics</td>
<td>• Make offers</td>
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**Travel request**: simulate a population of individuals, each with their own characteristics, preferences and travel patterns. These individuals create requests for travel which pop up during the simulation, between specific locations, and at specific times; they may also include constraints such as earliest/latest pickup together with the individual’s characteristics.

**Operators**: receive the request, query vehicle positions, shortest paths and ‘current’ network conditions, and use the data to make the agent an offer. Each offer may have distinct elements of walk, wait, and in-vehicle time, together with distance, cost, and number of interchanges.

**Dynamic mode choice**: specify either a minimum cost or discrete choice logit function to choose between the offers received. You can even include ‘Internal operators’ to represent ‘conventional’ modes such as rail and private car.

**Trip execution**: the selected offer is accepted and passed to the simulator for execution. The operator is notified and updated on the status of the travel request and assigned vehicle.
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