

# Traffic Simulation for a Better Planning of Public Prioritisation in Bologna

## Who will use it:

As part of the Spine project, the Municipality of Bologna is an active member of the living lab; therefore, it represents the main user who will get access to insights generated by the simulation platform.

## What could be the impact?

Within the main impact that Aimsun Digital Twin will bring to the city, we can identify:

- High-fidelity simulation testbed that reproduces observed traffic behaviours along a specific corridor located at the city centre.
- Assessment of “what-if” scenarios—such as the expected improvements on traffic-derived emissions and travel times of buses/cars due to PT prioritisation and speed limits.

## Development & testing in SPINE:

The development of the traffic simulation model is completed for a corridor between Via Irnerio and Via Enrico Mattei. Next steps are directed towards the definition of traffic-related KPIs that allow the assessment and comparison of the different simulation scenarios

## Can it be transferred?

Yes, the methodology to develop traffic simulation models can be transferred to other cities, as long as the following minimum data requirements are guaranteed:

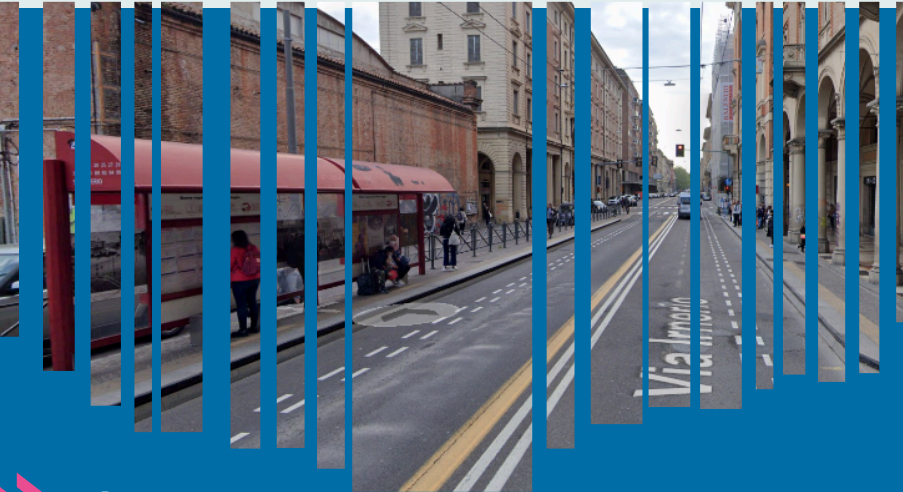
- Network geometry for the study area
- Traffic counts
- Demand data for origins and destinations of trips
- Traffic signal plans
- Bus routes and frequencies

Having these digital assets, a modelling effort is required to replicate existing traffic for the area of study and to define and simulate the scenarios of interest for the final users.

## What's next:

The next step is to collaborate with Bologna Municipality on defining the most relevant traffic-related KPIs - such as travel times and emissions for the PT service. Thus, the indicators can provide input for better PT planning, scheduling, and more reliable PT services.

As future work after the Spine project, the simulated model can be expanded to cover a wider area. This will enable the evaluation of the effects of public transport policies on the wider city area and not only on specific corridors. With this broader perspective, policymakers will be able to carry out more comprehensive assessments of mobility strategies, with the goal of attracting more passengers to PT and encouraging a shift away from private car use.



## About

Bologna is a lead city of the EU-funded Spine project. Within its living lab, the city is seeking to estimate the impact that Public Transport (PT) Prioritisation - giving priority to buses over cars at signalised intersections - has on traffic under different speed limits (e.g., 30 and 50 km/h), which are related to a City30 measure currently in place in the city.

This assessment is done by means of a microscopic traffic simulation that replicates how traffic behaves over time within an area of study. Specifically, this approach simulates the motion of individual vehicles in response to the surrounding traffic for multiple “what-if” scenarios.

## Key Features



Transport Planning capability

