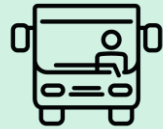
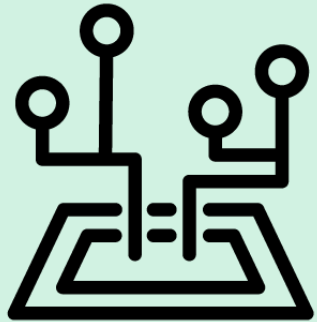


EXECUTIVE VERSION

PLANNING AND OPERATION IN URBAN TRANSPORT

Tool Guide

For non-advanced users



November 2023

In collaboration with:

NOMMON  aimsun.

MOBILITY
INSTITUTE
RACC

En asociación con **Deloitte**

This document is an executive version of Mobility Insights. The full version will be sent, exclusively, to all Mobility Institute members

MOBILITY INSIGHTS

PLANIFICACIÓN Y OPERACIÓN EN EL TRANSPORTE URBANO

Guía de herramientas
para usuarios no avanzados



Noviembre 2023

Con la colaboración de:

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“

Data is essential for informed and justified decision making in the planning and operation of urban transport systems, allowing the different agents to carry out projects based on evidence and not on assumptions...

... therefore, this executive version of the 'tool guide' aims to help non-advanced users in the most relevant aspects of urban transport planning and operation, exploring which data are crucial, how they can be worked with and how they can help the different transport agents according to their defined objective.

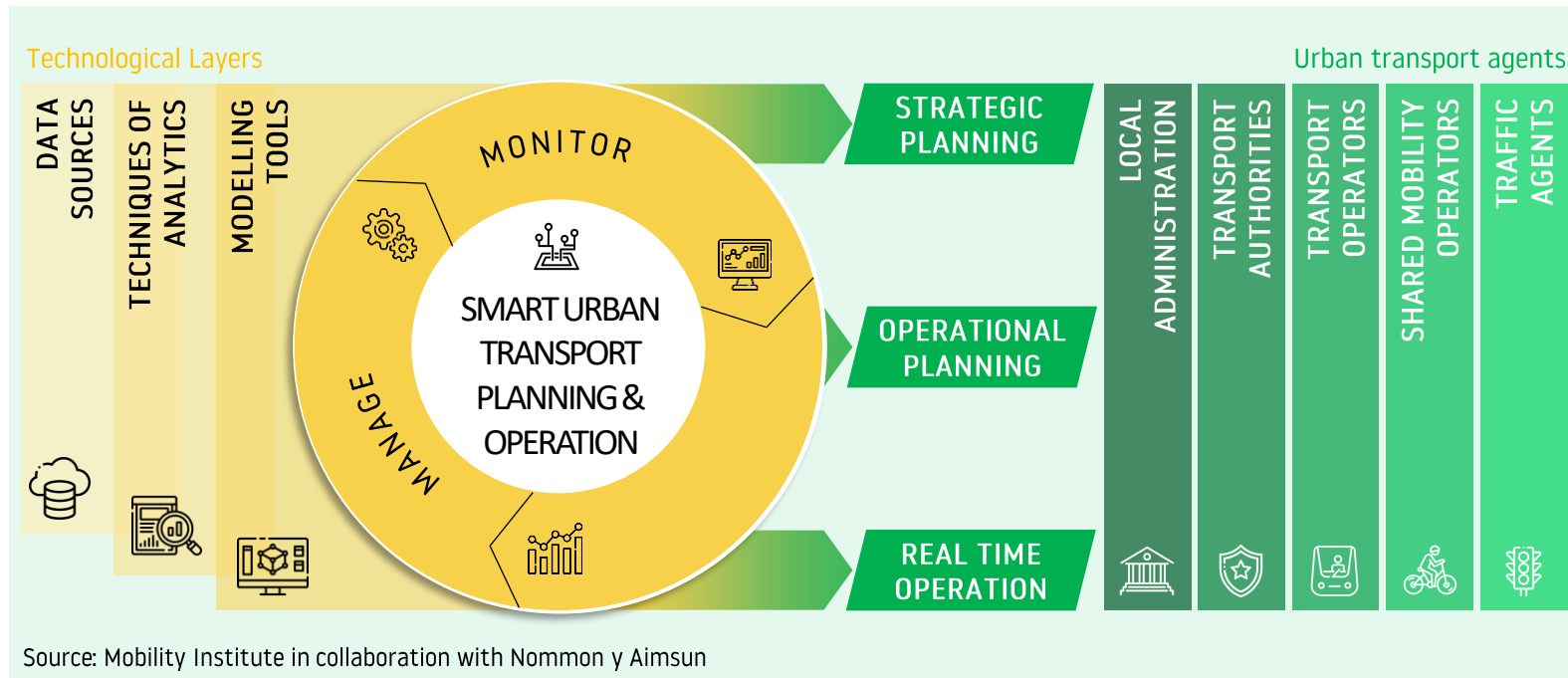
”

This Executive Version was created with the objective of organizing the solutions available for the planning and operation of urban passenger transportation



Objectives of this Executive Version of the 'toolkit':

CONCEPTUAL FRAMEWORK FOR URBAN TRANSPORTATION PLANNING AND OPERATION



Source: Mobility Institute in collaboration with Nommon y Aimsun

* Technology layers refers to a specific part or level of the technology infrastructure needed to manage, monitor or predict urban passenger transportation systems.

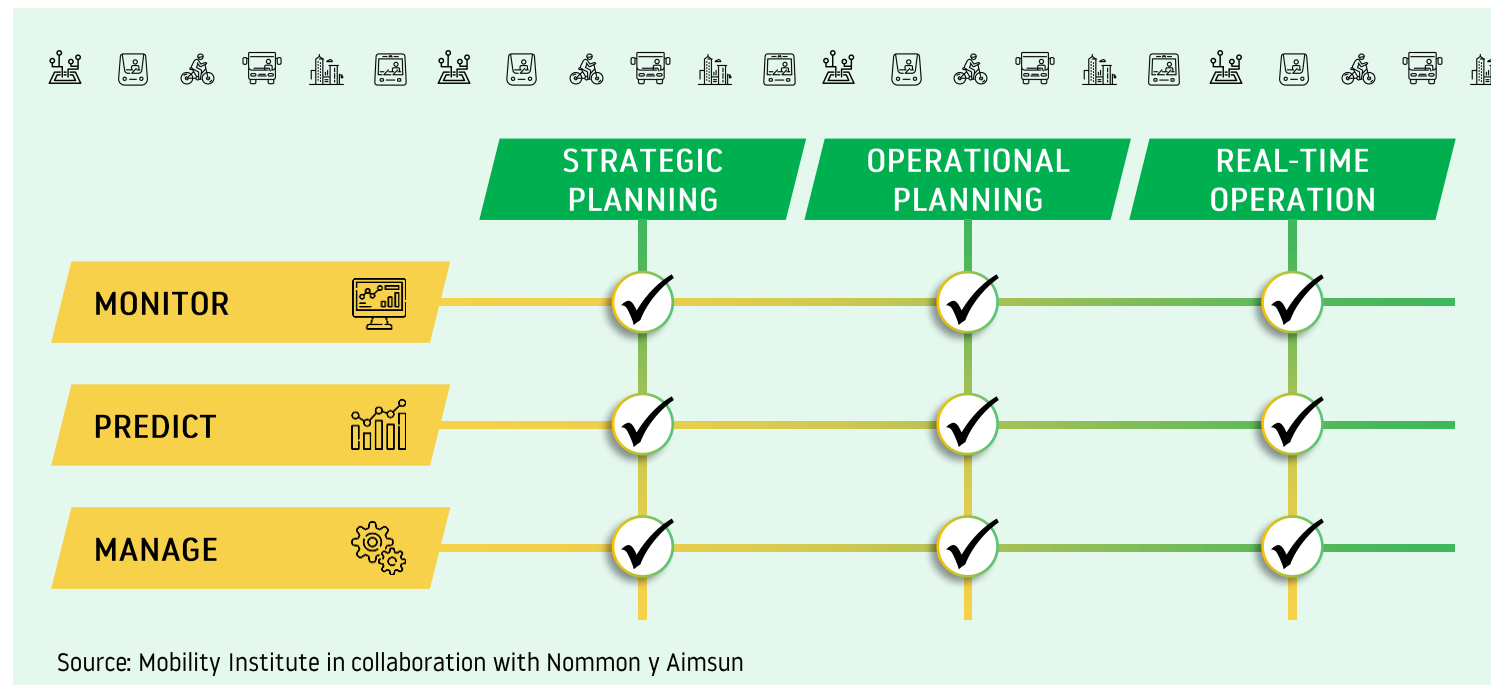
- + Identify the main data analysis and modeling needs of the different actors in the sector
- + Describe the data sources and analysis techniques currently available to meet the different needs of the sector
- + Describe the modeling tools currently available to meet the needs of the sector
- + Present solutions and use cases that provide examples of the application of data analysis and modeling tools in the industry

In collaboration with:

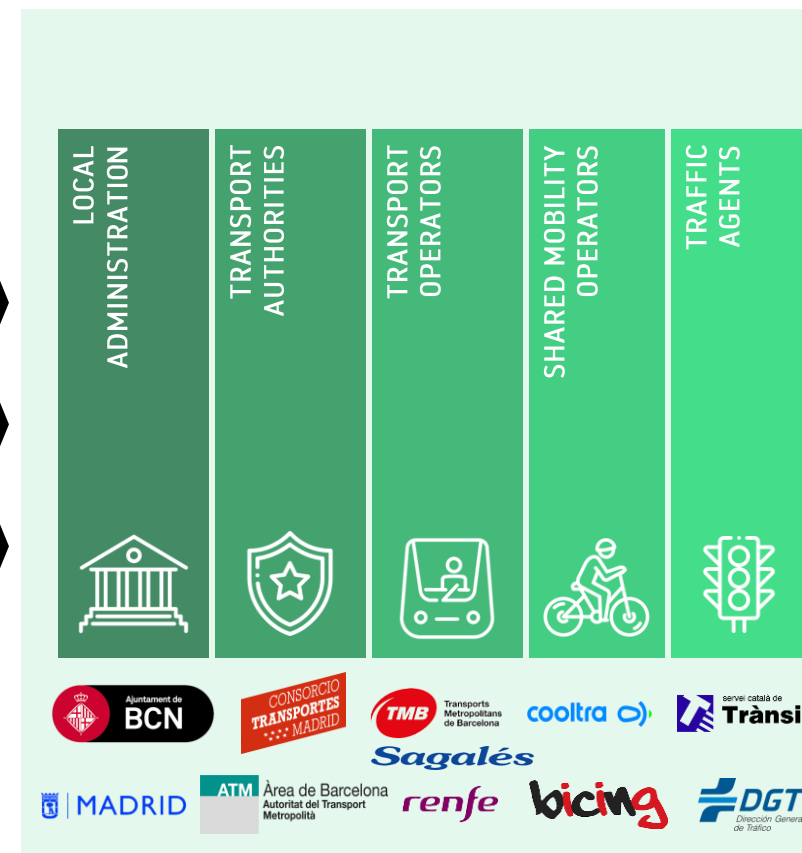
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Nine niche needs have been identified, which must be addressed by the different transport agents defined

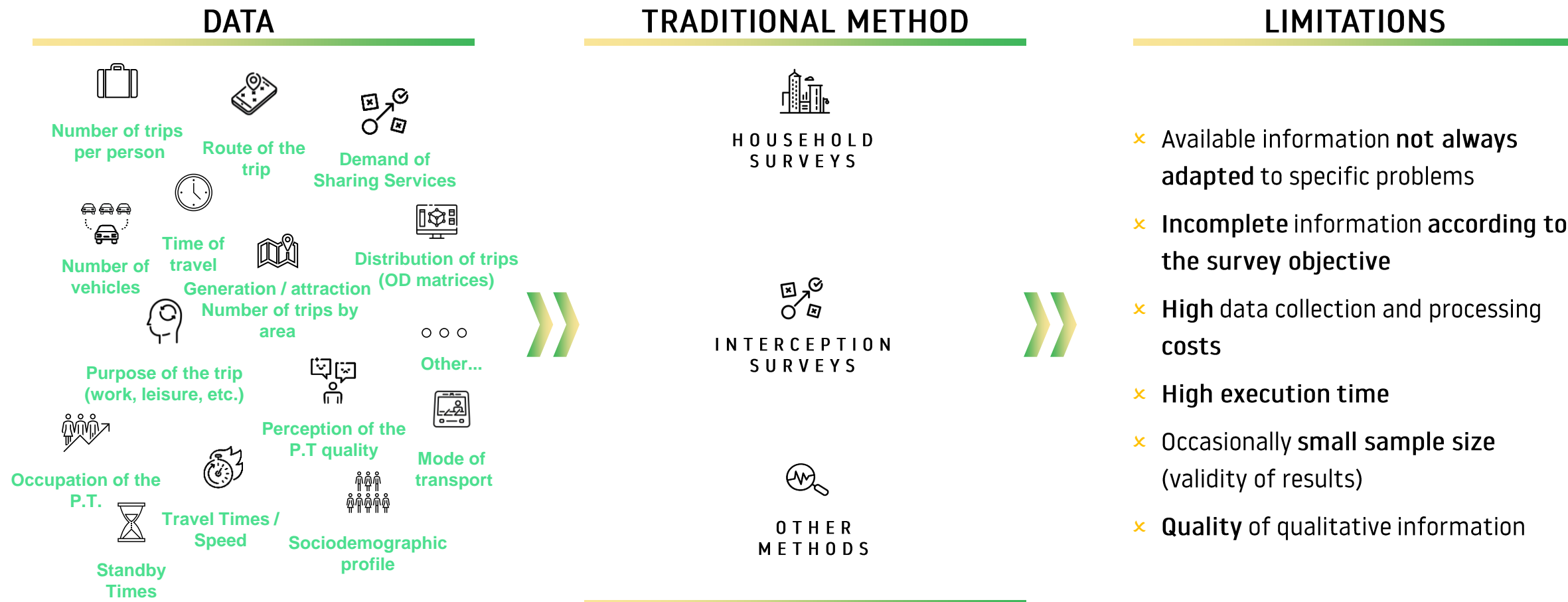
SMART URBAN TRANSPORT PLANNING & OPERATION



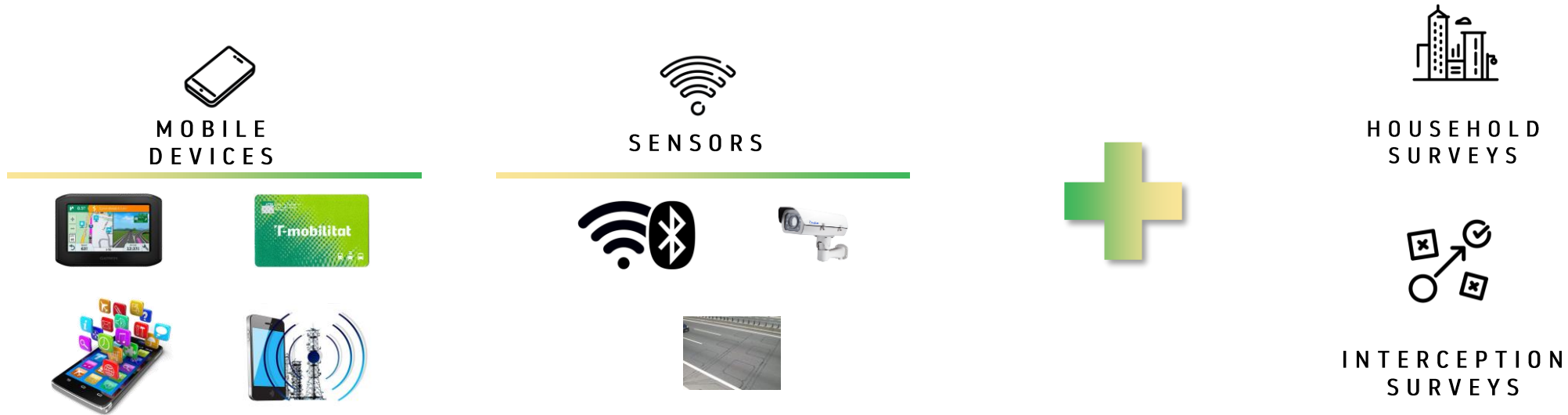
DEFINED TRANSPORTATION AGENTS



These transport agents have a need for different pieces of information that, traditionally, have been collected through surveys in a slow and expensive way...

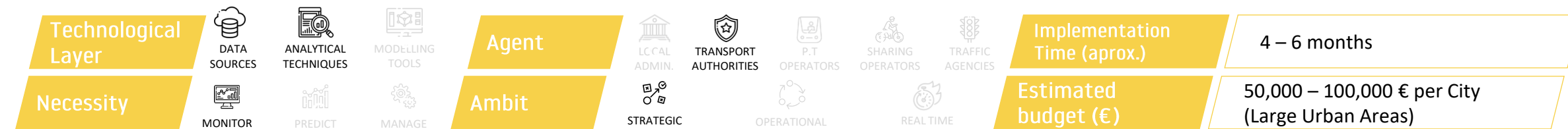


In addition, new data sources are now available, but it should be emphasized that none of them provides a complete picture of the...



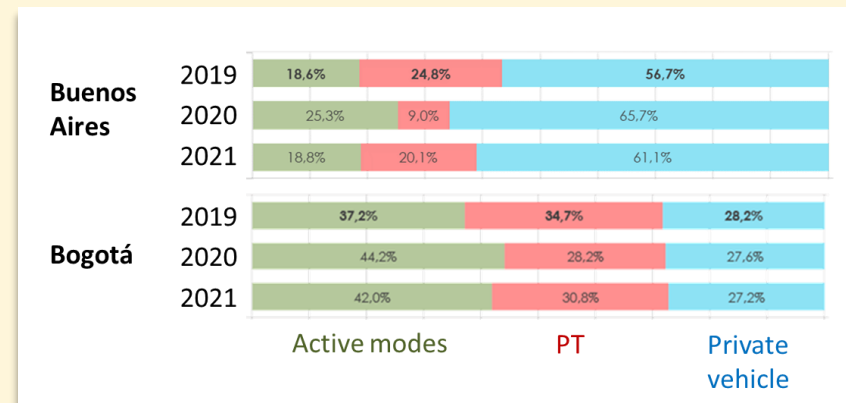
THE SOLUTION: THE DEVELOPMENT OF TOOLS THAT TAKE FULL ADVANTAGE OF THE STRENGTHS OF EACH DATA SOURCE

Study of the impact of the pandemic on travel demand in Bogota, Medellin and Buenos Aires



Detail

- The COVID-19 pandemic severely affected the demand for public transport around the world
- In order to help Latin American cities meet this challenge, the World Bank selected Nommon to develop a methodology for monitoring travel demand patterns based on the exploitation of geolocated data from mobile devices
- The methodology was demonstrated in **Bogota, Medellin and Buenos Aires**, in close collaboration with local transport authorities. The project, which combines cell phone and public transport smart card data, provided a detailed understanding of how the pandemic disrupted mobility patterns, with a particular focus on public transport demand



Predicting CO2 savings through shared mobility in Norway



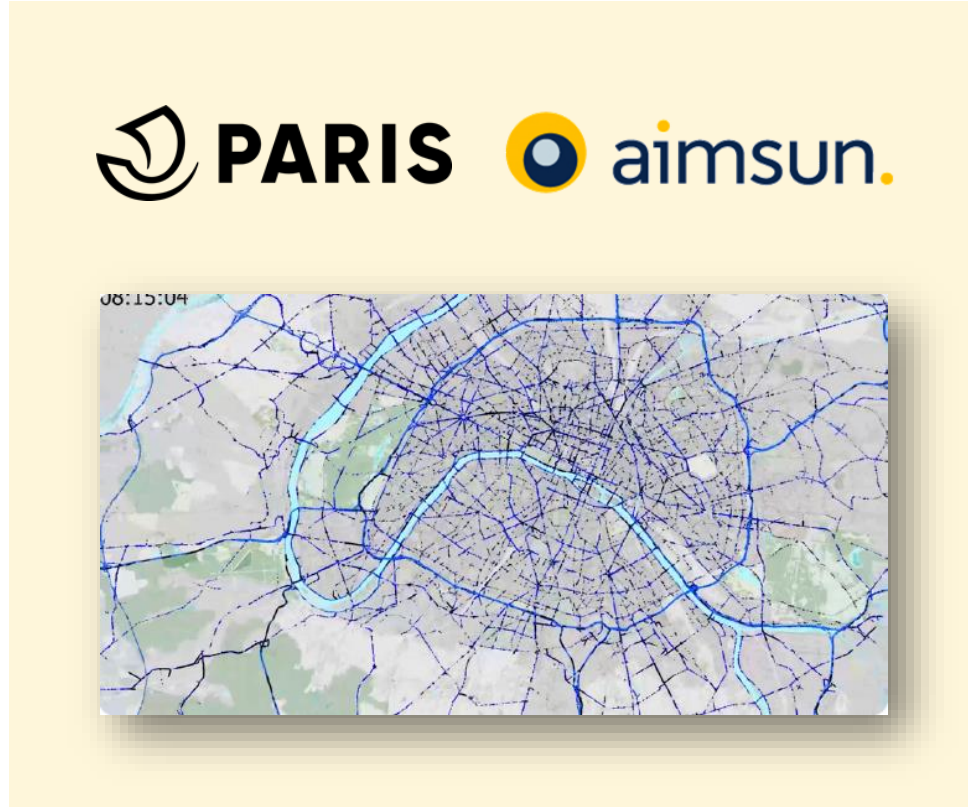
- Detail**
- In Stavanger (Norway), as part of the European AI4Cities program, Nommon and Populus worked to develop and implement an AI-based solution that allows cities to analyze the impact of shared mobility on CO2 savings to facilitate the design of sustainable mobility policies
 - The solution combines mobile, survey and shared mobility operation data to build ML demand forecasting and modal substitution models that provide the following indicators:
 - **Demand projections** for shared mobility trips that have origin and destination in each of the areas of the municipality.
 - **Estimated CO2 emissions** from shared mobility trips and in each of the substitution modes.
 - **Estimated CO2 savings** corresponding to modal shift.

Dynamic planning and operations model from the Eiffel Tower to the Place de la Bastille (Paris)



Detail

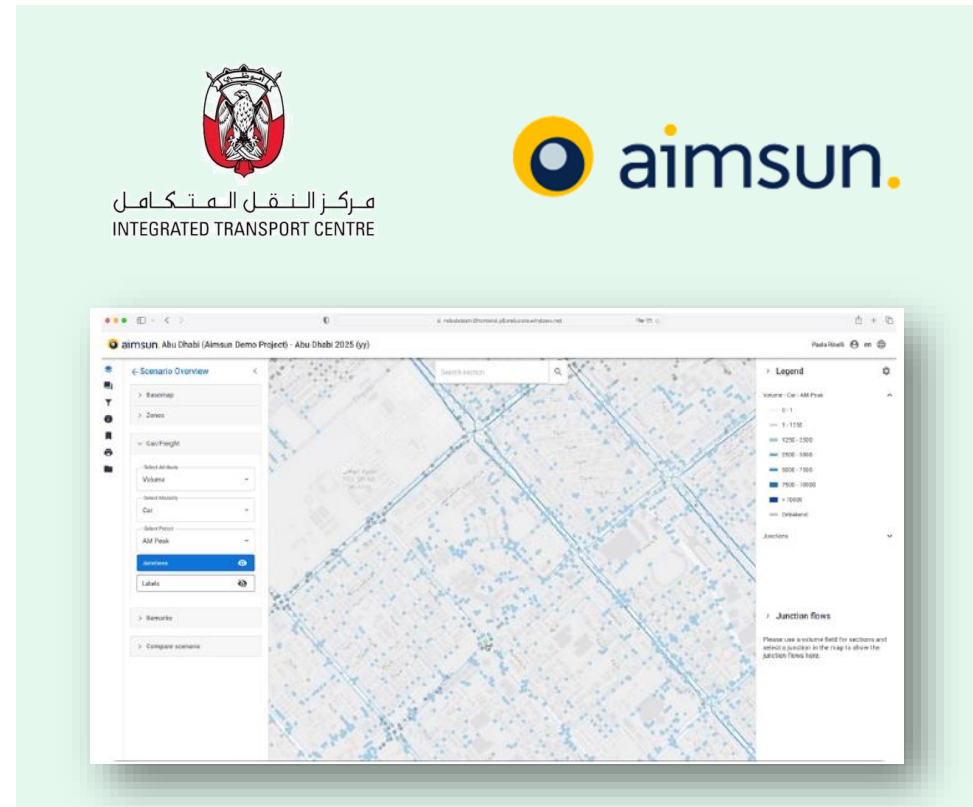
- In Paris, the **dynamic model** in operation since 2010 and covering 500 km² (3,500 km of roads and 11,000 intersections) informs the city's **daily transport planning and operations**, from the redevelopment of the entire Eiffel Tower area to the integrated mobility schemes at Place de la Bastille
- The Paris model informs all aspects of:
 - Transportation planning
 - City and neighborhood master plans
 - Design of public transport routes and schedules
 - Active mobility plans: bike lanes and pedestrianization
 - Space creation projects
 - Streetcar extensions
 - Infrastructure planning and design



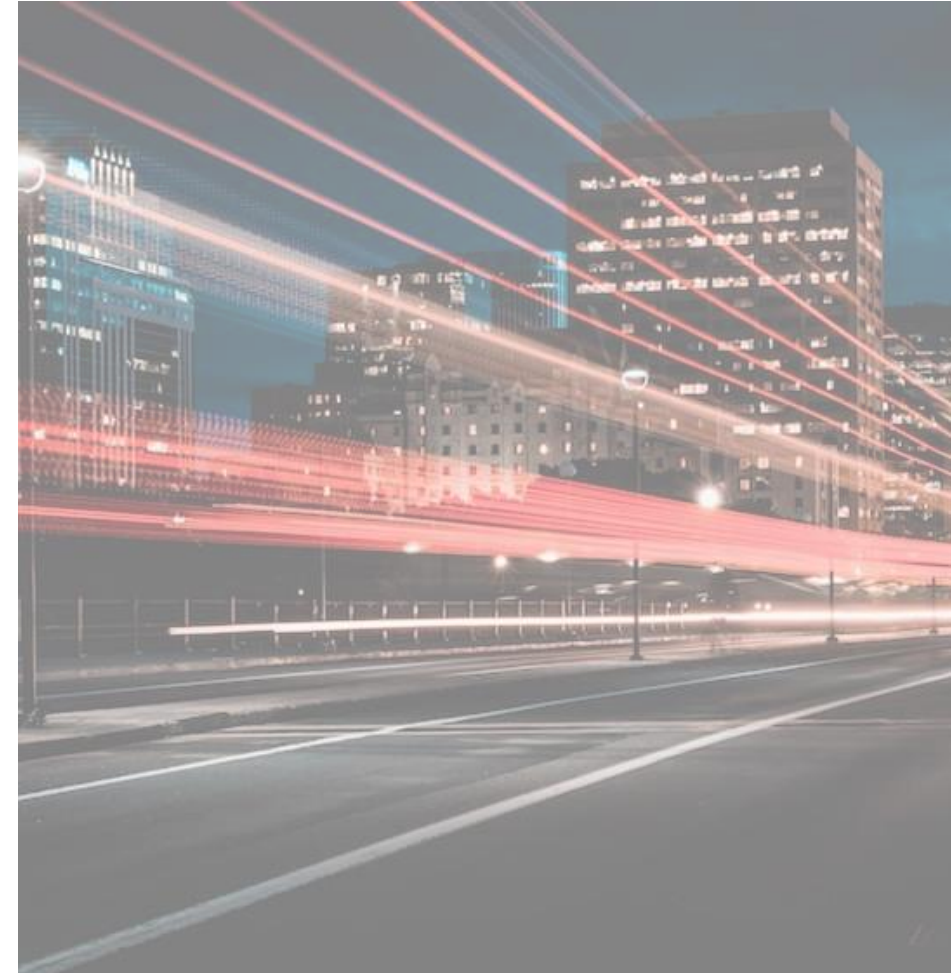
Modelo de simulación híbrido (HSM) para mejorar las capacidades de la demanda estratégica existente en Abu Dhabi



- Detail**
- En Abu Dhabi, se desarrolló un proyecto cuyo objetivo es implementar un modelo de simulación híbrido (HSM) para mejorar las capacidades de la demanda estratégica existente del modelo
 - El HSM proporciona una **plataforma para probar esquemas e intervenciones** con el nivel apropiado de detalle dentro de plazos muy reducidos y con una representación de modelo consistente
 - Aimsun desarrolló un conjunto de **procedimientos de automatización y secuencias de comandos** para procesar la amplia gama de conjuntos de datos disponibles, garantizando que los procesos fueran repetibles
 - **STEAM+** es una innovadora **plataforma de modelización de transporte**, basada en un gran almacén de datos, modelos estratégicos y de varios niveles, y una herramienta de visualización que simula el movimiento de 12 millones de personas



Ultimately, to address initiatives to improve decision-making in the planning and operation of urban transport, transport agents are recommended to...





THANK YOU

hola@mobilityinstitute.es



Guide elaborated in
collaboration with

NOMMON  **aimsun.**