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# Simulating Scenarios for the Evaluation of Data Management Approaches for Searching Parking Spaces

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## Importance of parking

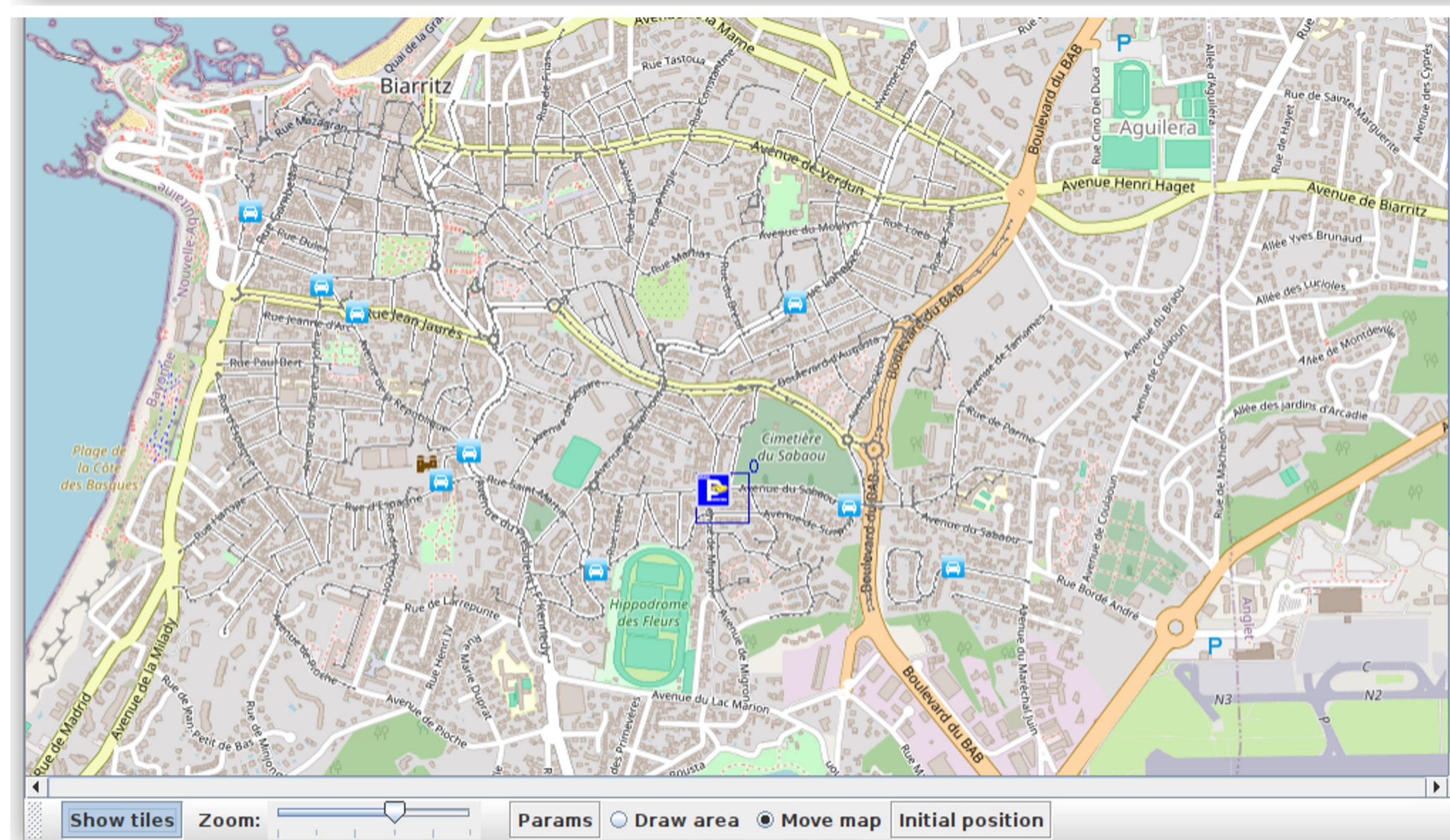
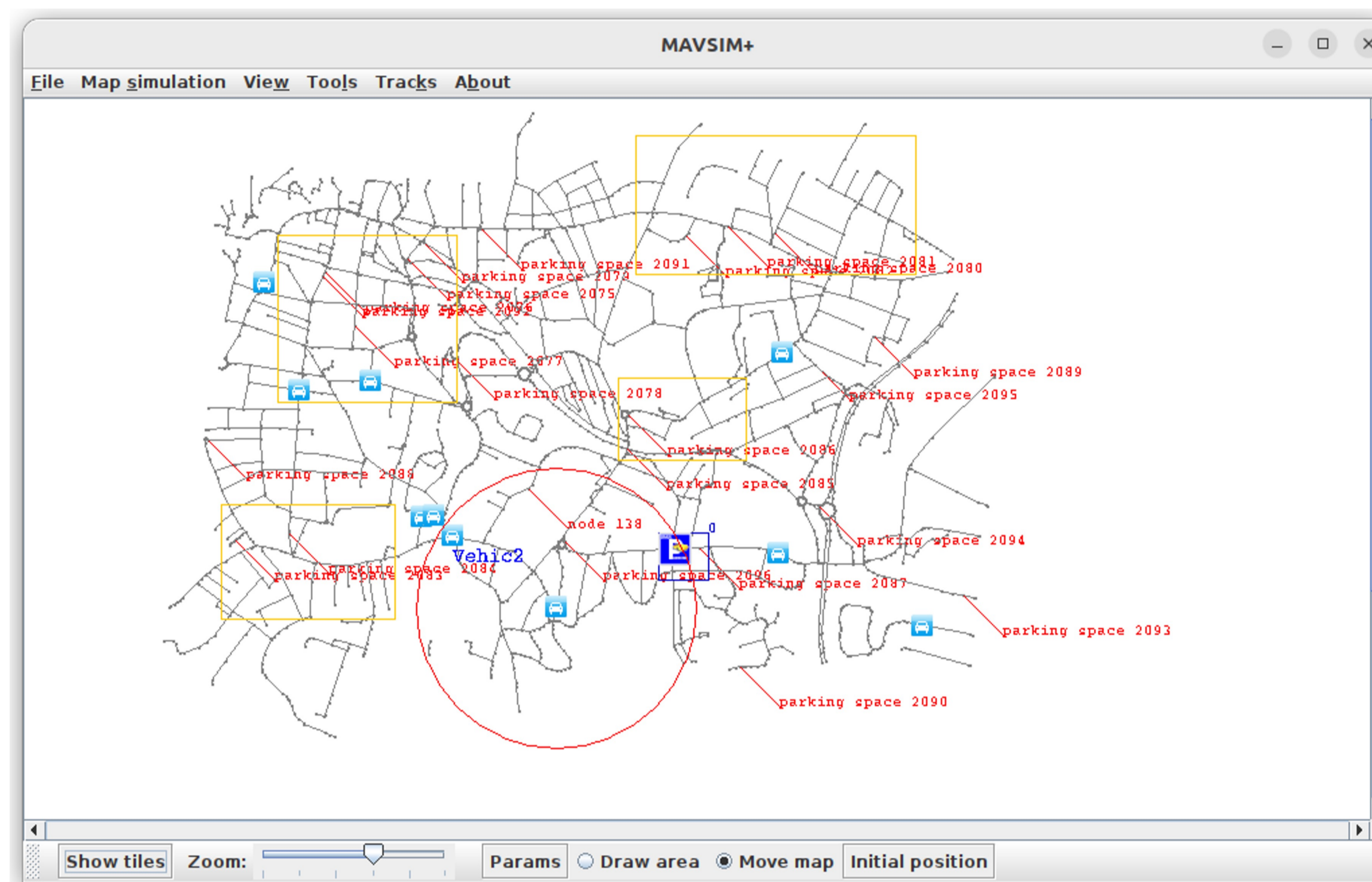
- ❑ Parking spaces are a scarce resource for drivers
- ❑ Search of parking:
  - time → fuel consumption → pollution → health impact
- ❑ Up to 30% of cars are searching for an available parking space
- ❑ Cars are stationary most of the time

## Motivation

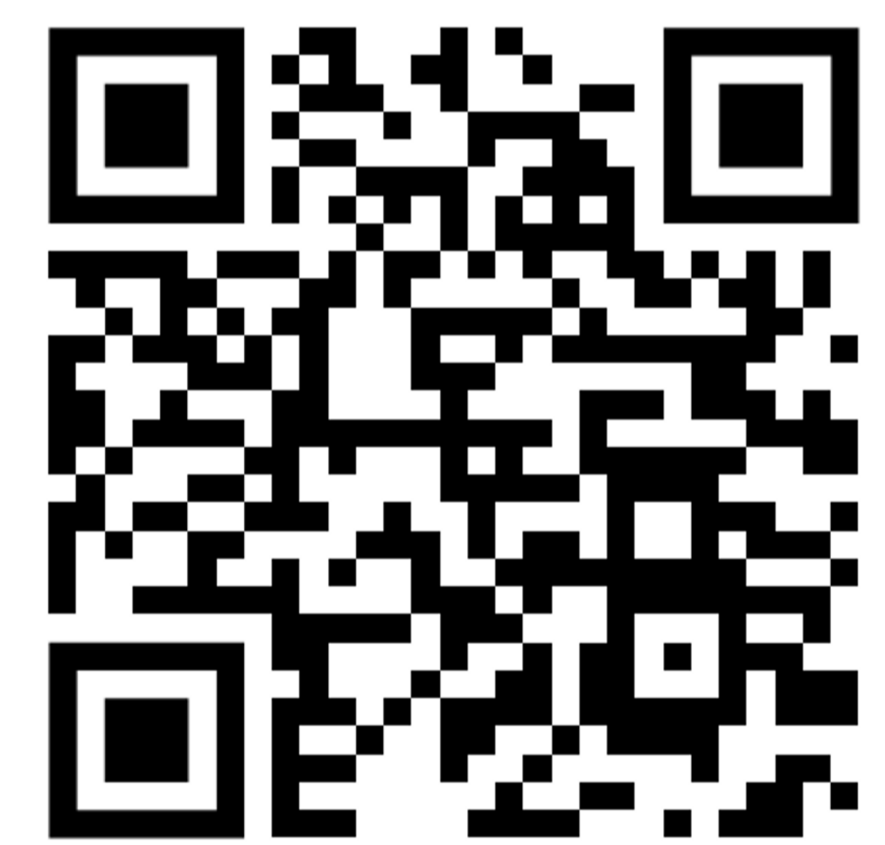
- ❑ Parking search is a relevant problem
- ❑ In scenarios of spreading diseases, things could get worse:
  - Higher use of private vehicles vs. public transportation
  - Correlation between air pollution and the spread of respiratory diseases
- ❑ Data management strategies and suitable information services can help!

## MAVSIM+ (<https://webdiis.unizar.es/~silarri/prot/MAVSIMPlus/>)

- ❑ Vehicular network simulator with support for any real map and full integration with OpenStreetMap
- ❑ Invention: University of Zaragoza — PII-2023-0026



- Functionalities to test data management strategies for parking spaces:
  - On-street (i.e., curbside) parking, including “hot areas” for parking
  - Parking lots → complementary SimulParking tool

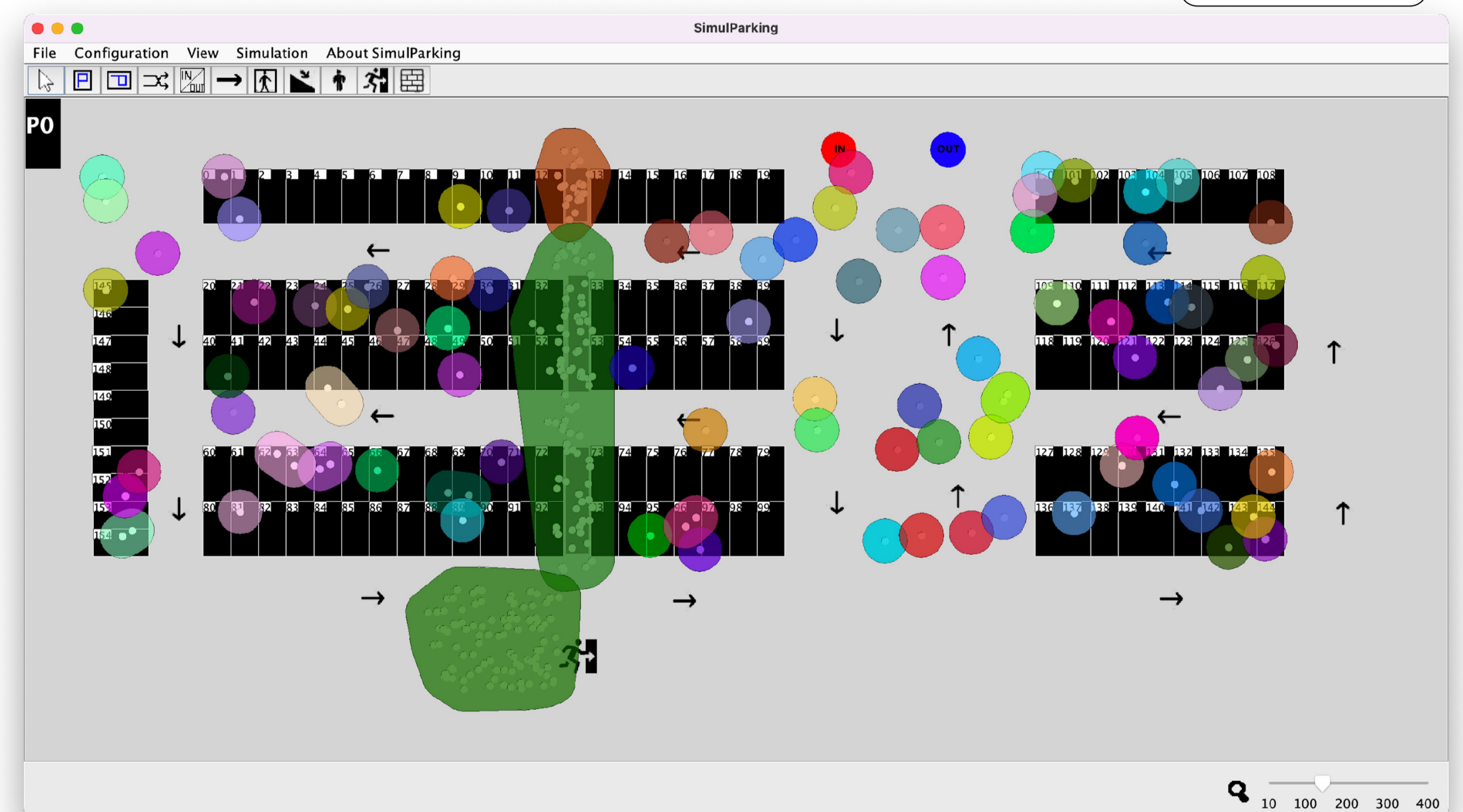


## Data management for parking spaces: challenges

- ❑ Traditional solutions ignore some important aspects
  - E.g., distance between occupied parking spaces, space available for parking
    - ❑ Risk of collisions/scratches, concentration of pollutants, risk of virus contagion (especially indoors), on-street parking may affect social distancing
- ❑ Evaluating data management techniques is challenging:
  - ❑ Real scenarios → need of many volunteer vehicles and people
  - ❑ Simulated scenarios → lack of simulators focused on parking spaces
- ❑ Suitable tools to facilitate the evaluation would be welcome!

## SimulParking (<https://webdiis.unizar.es/~silarri/prot/SimulParking/>)

- ❑ Definition and simulation of parking lots
- ❑ Invention: University of Zaragoza — PII-2023-0025



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