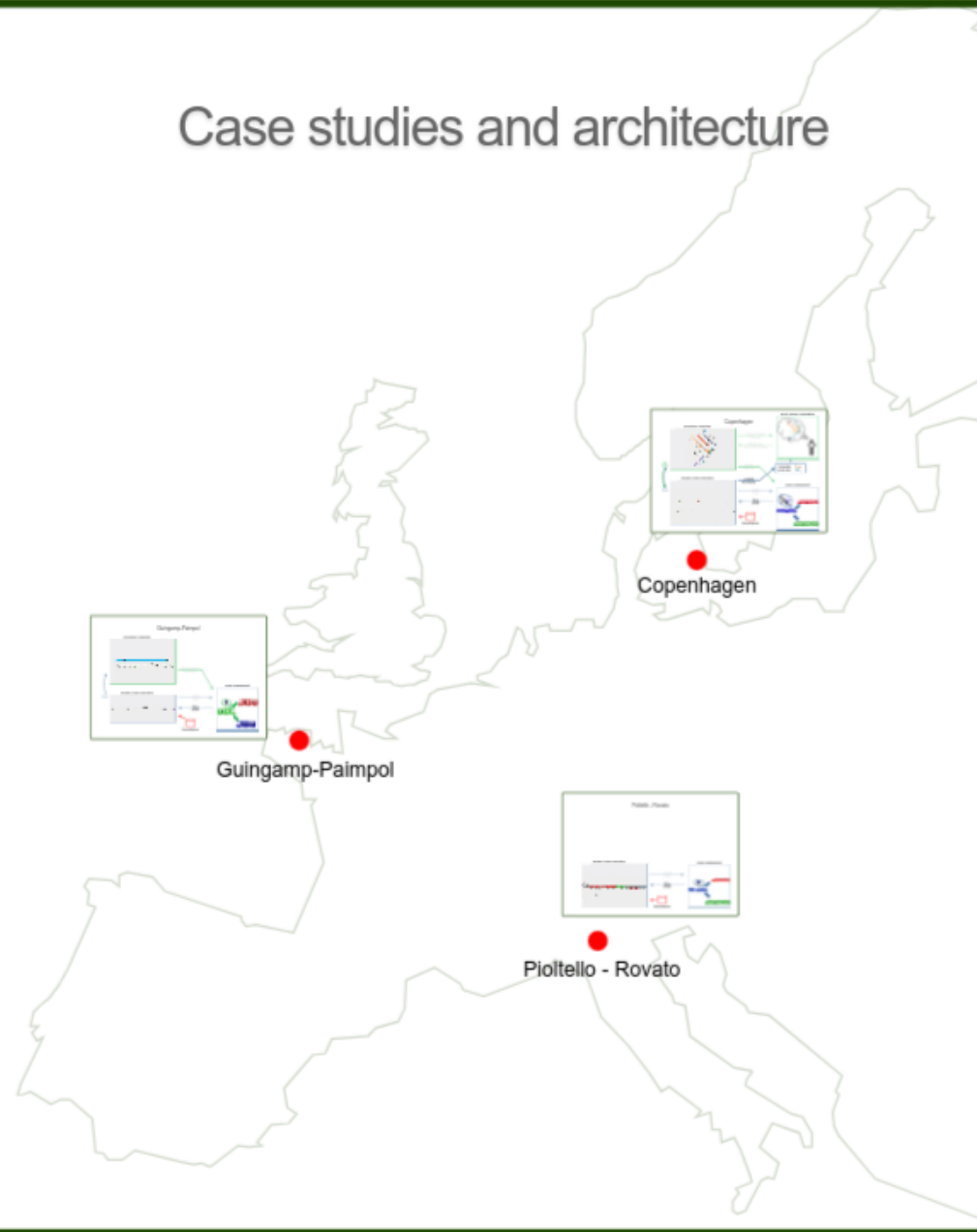
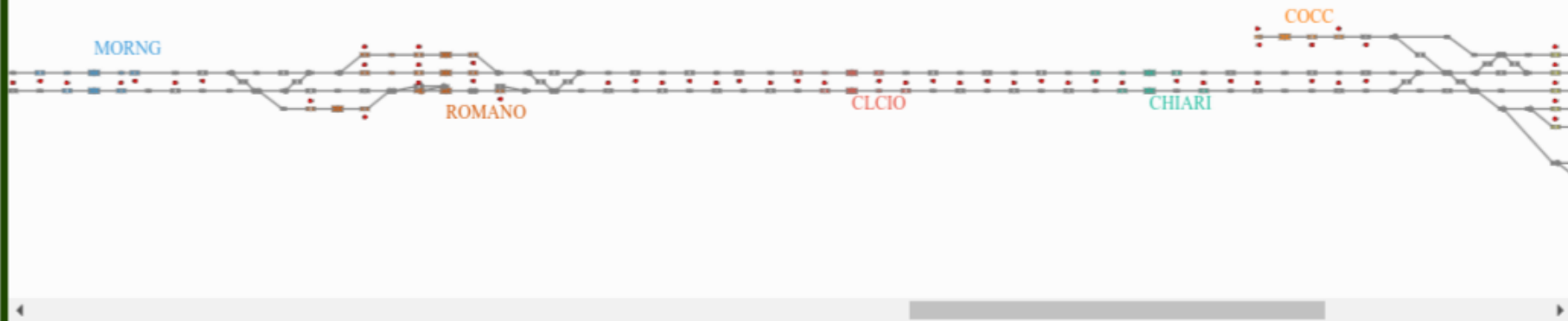
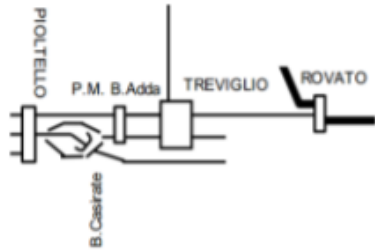


Case studies and architecture

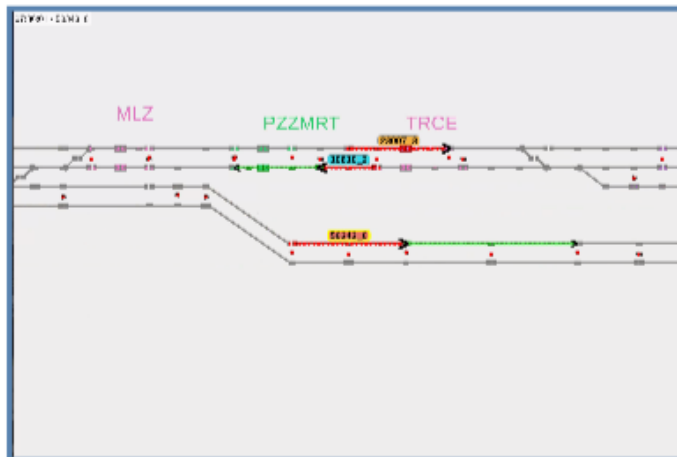


Pioltello - Rovato



Pioltello - Rovato

Railway Traffic Simulation

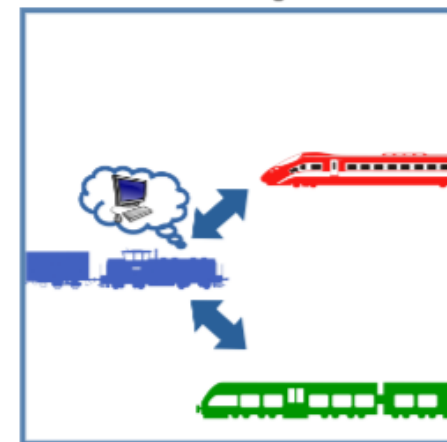


Traffic State

New RTTP

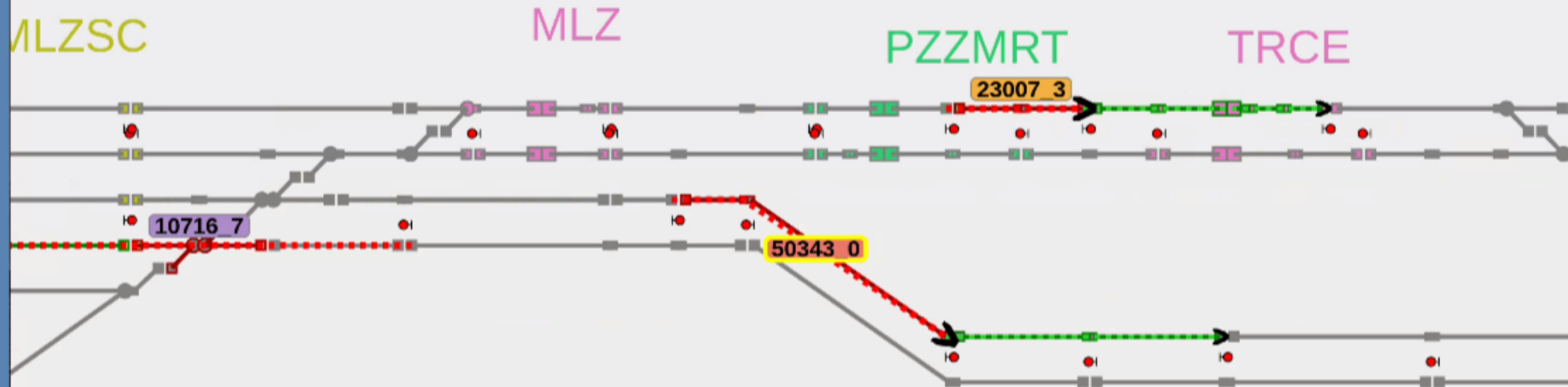
Perturbations

Traffic Management



Railway Traffic Simulation

07:34:49 - 50343_0



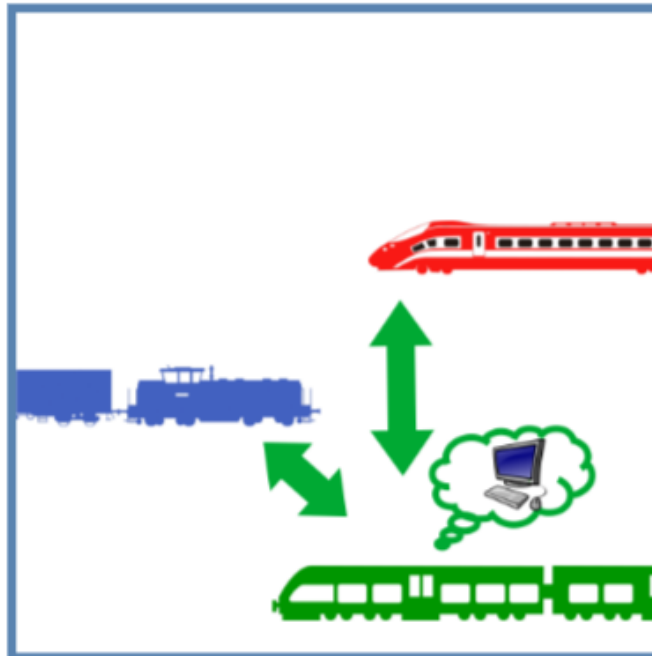


Traffic State

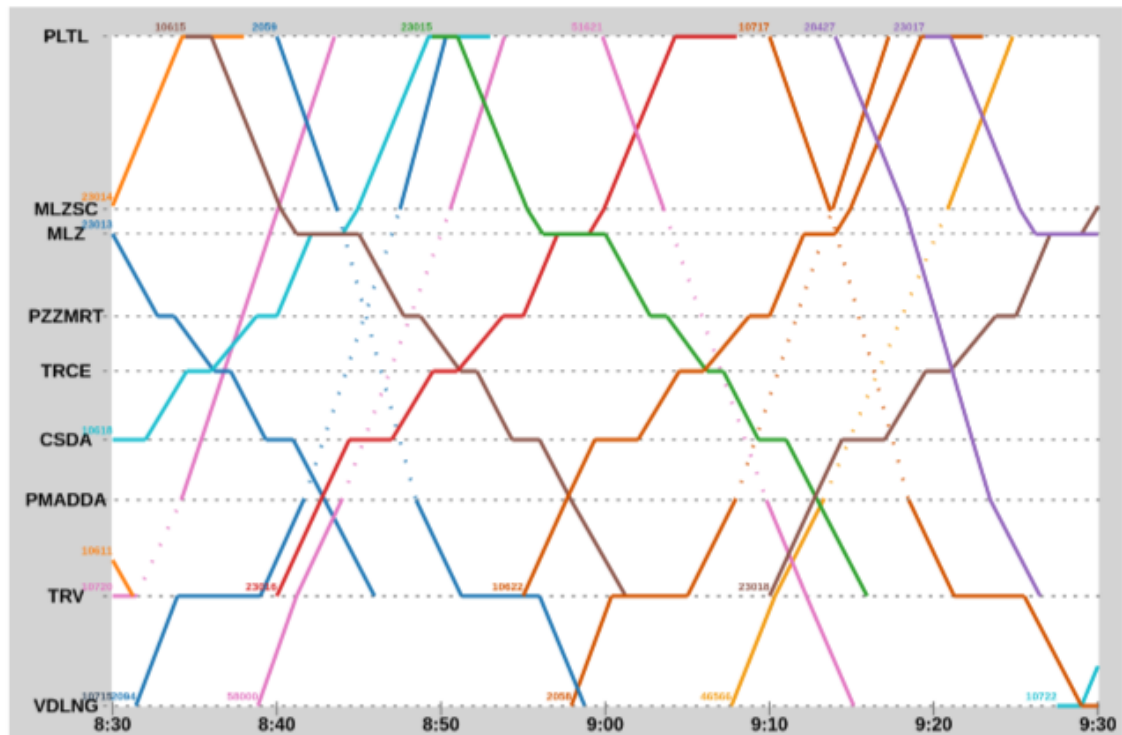
New RTTP

Perturbations

Traffic Management

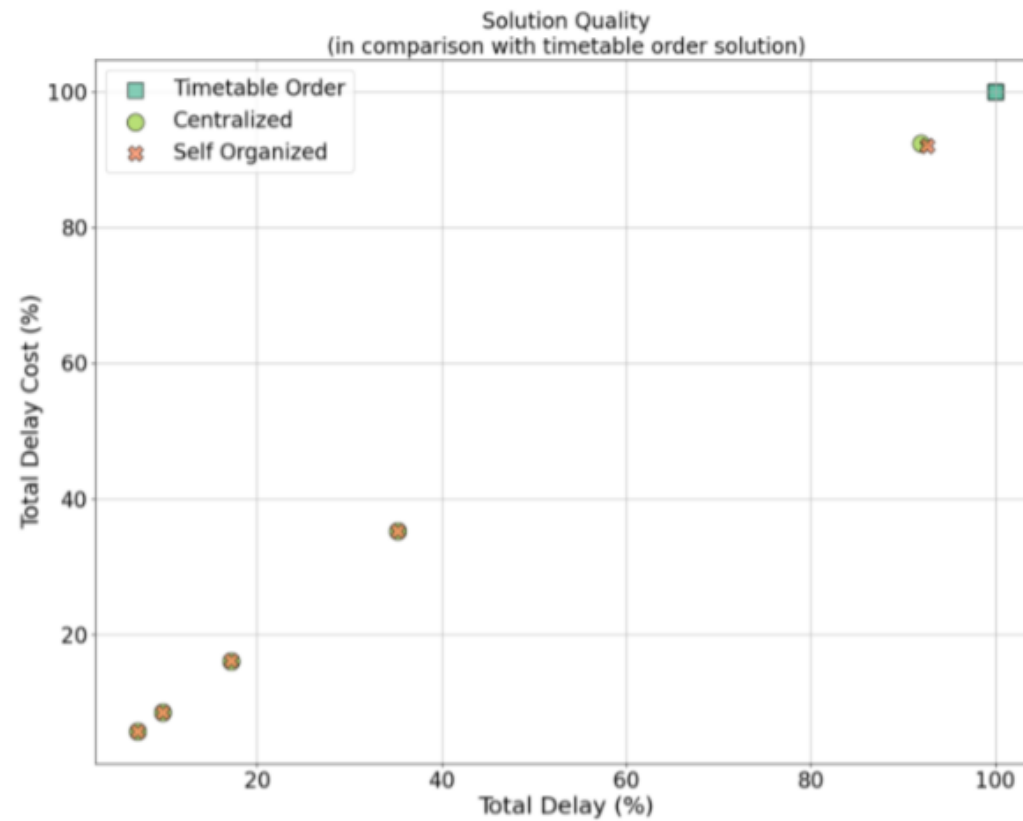


Timetable



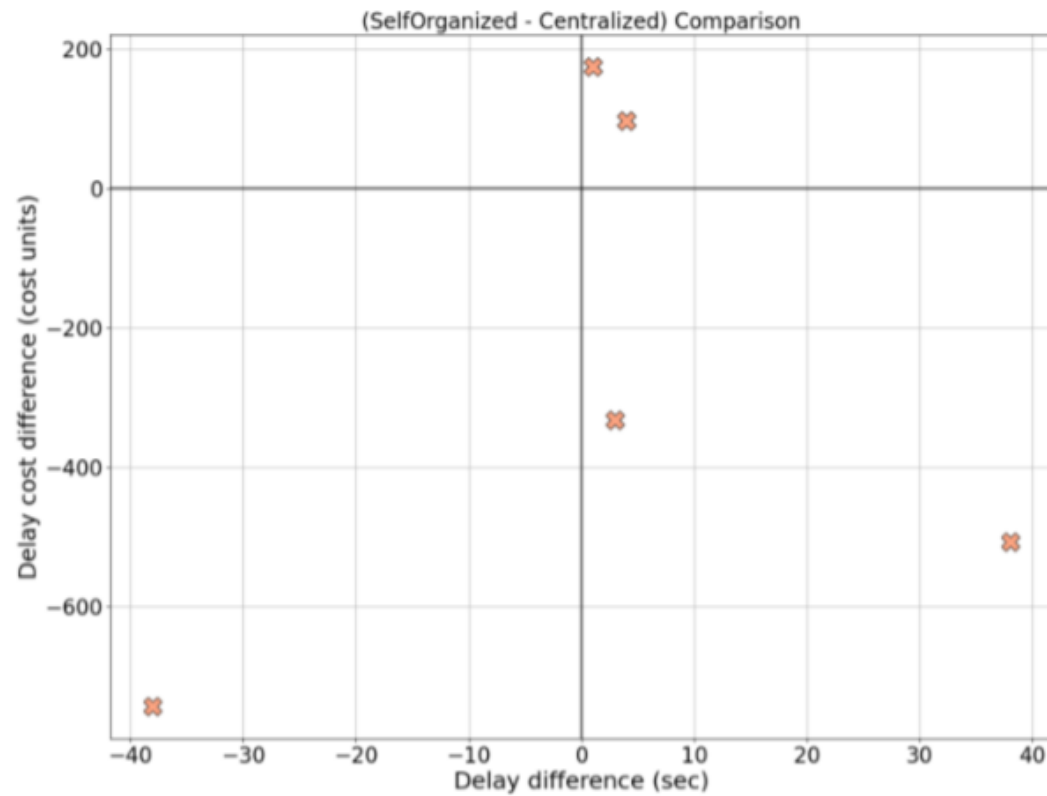
- 6 AM and 11 AM time horizon
- 77 trains
- Perturbations :
 - 5 scenarios with random entrance delay distribution

Results

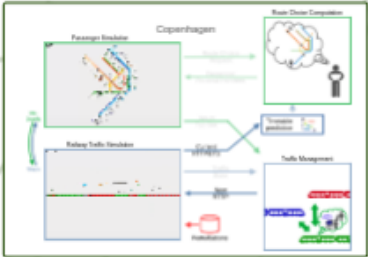


- Traffic State Horizon : 45 min
- Re-optimization period : 5 min

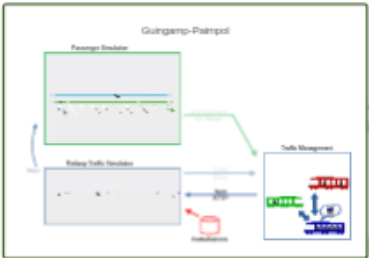
Results



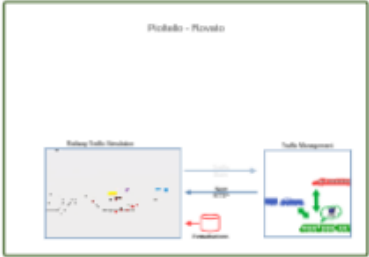
- Traffic State Horizon : 45 min
- Re-optimization period : 5 min



Copenhagen



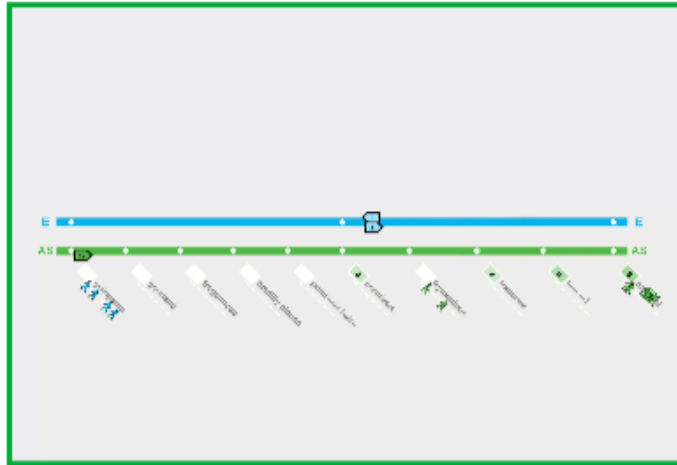
Guingamp-Paimpol



Pioltello - Rovato

Guingamp-Paimpol

Passenger Simulation



Railway Traffic Simulation



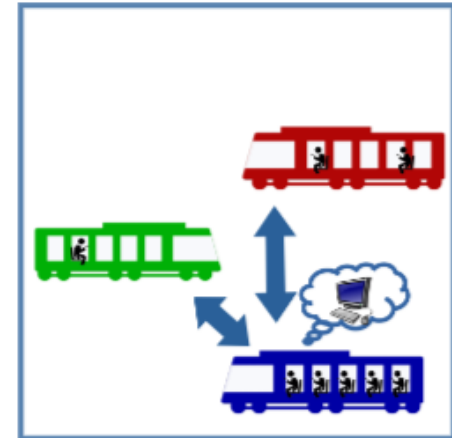
#Passengers
On-Board

Traffic
State

New
RTTP



Traffic Management

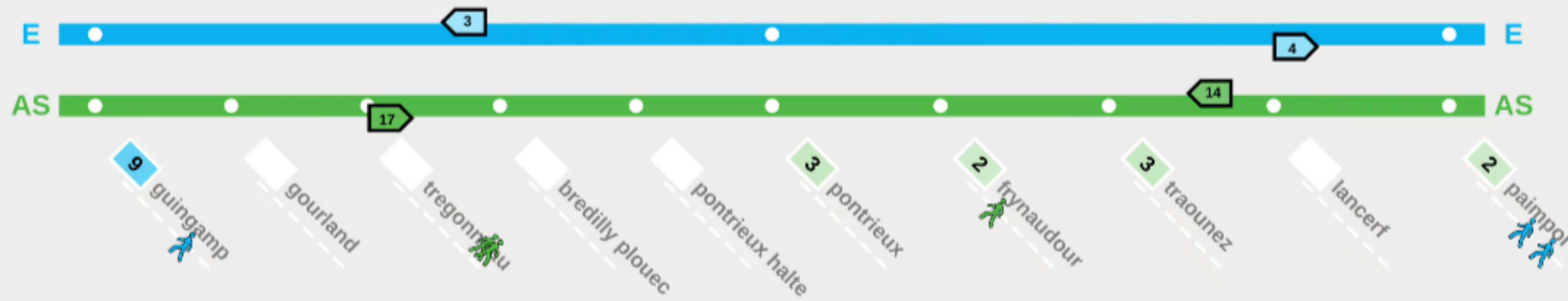


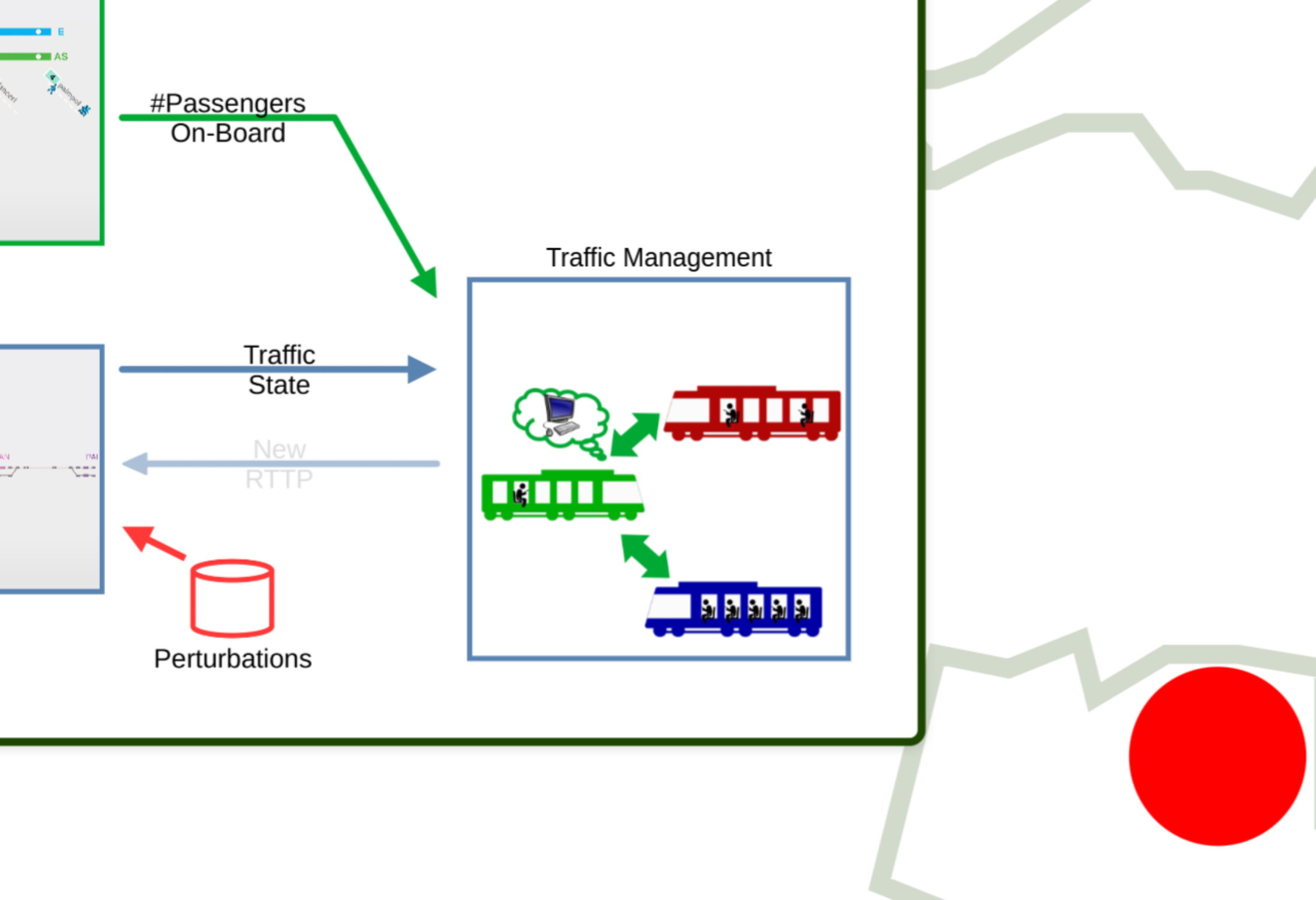
Railway Traffic Simulation

Stops

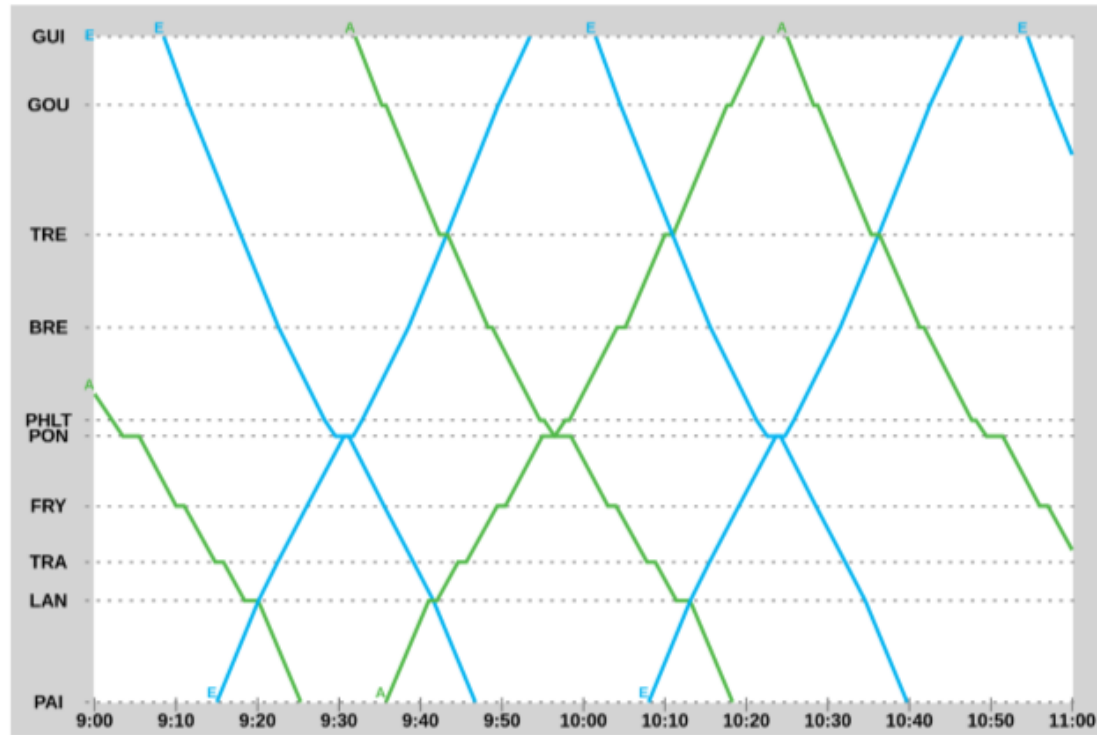


Passenger Simulation



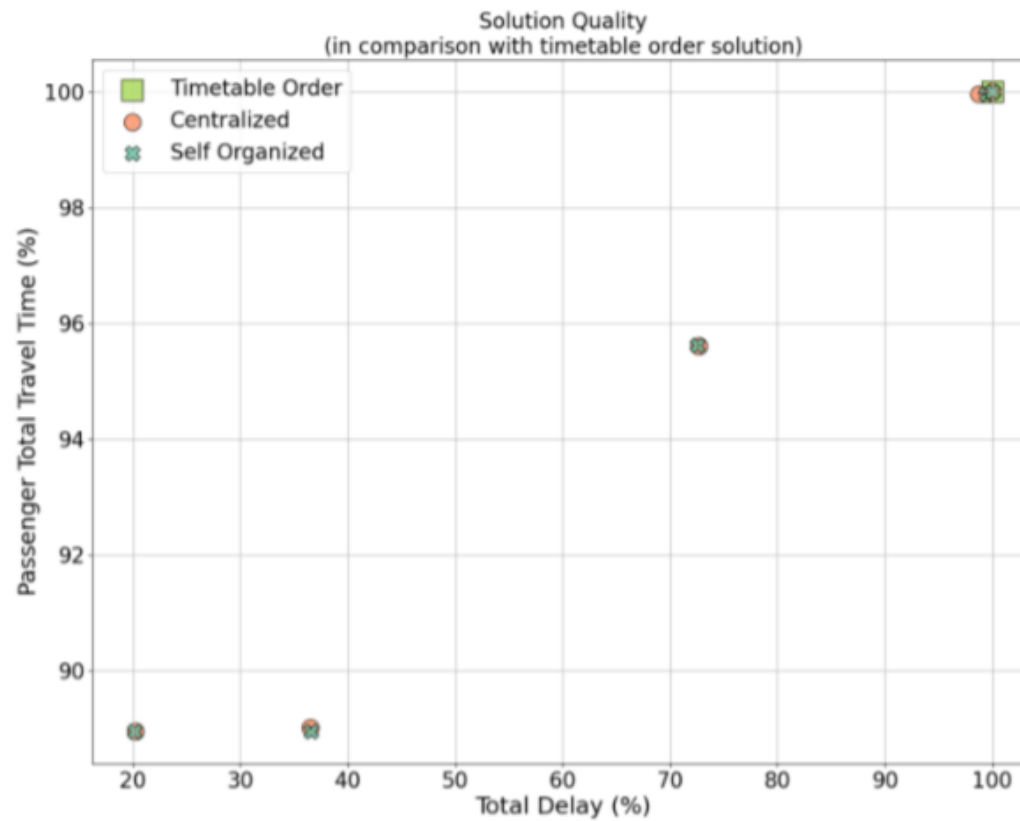


Timetable



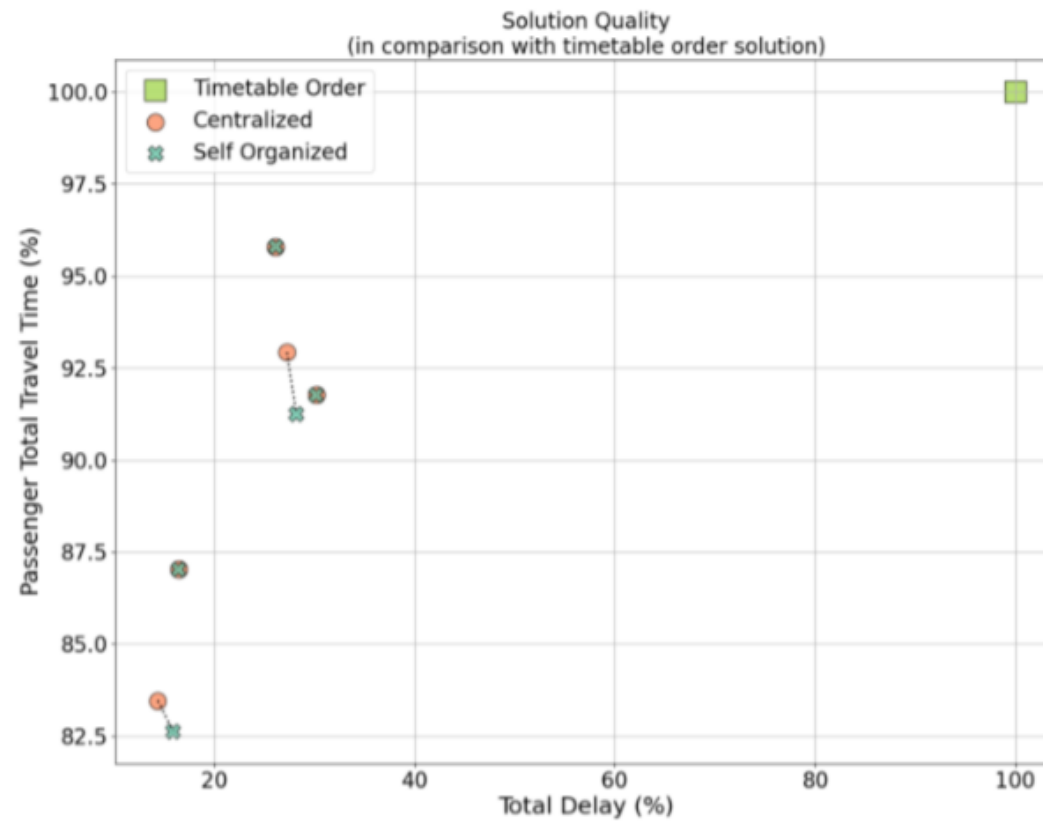
- 8 AM and 1:30 PM time horizon
- 21 trains, 144 passengers
- Perturbations :
 - 5 scenarios with random entrance delay
 - 5 scenarios with one longer stop (15 min - 1hour)

Results - Entrance Delay

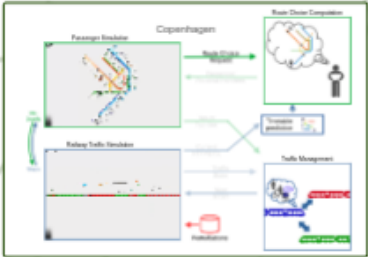


- Traffic State Horizon : 1 hour
- Re-optimization period : 5 min

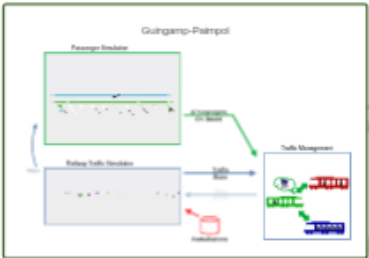
Results - Departure Delay



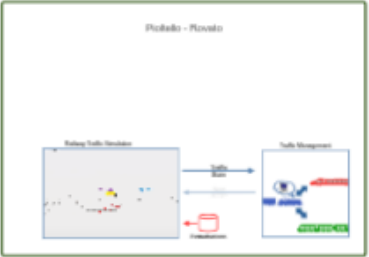
- Traffic State Horizon : 1 hour
- Re-optimization period : 5 min



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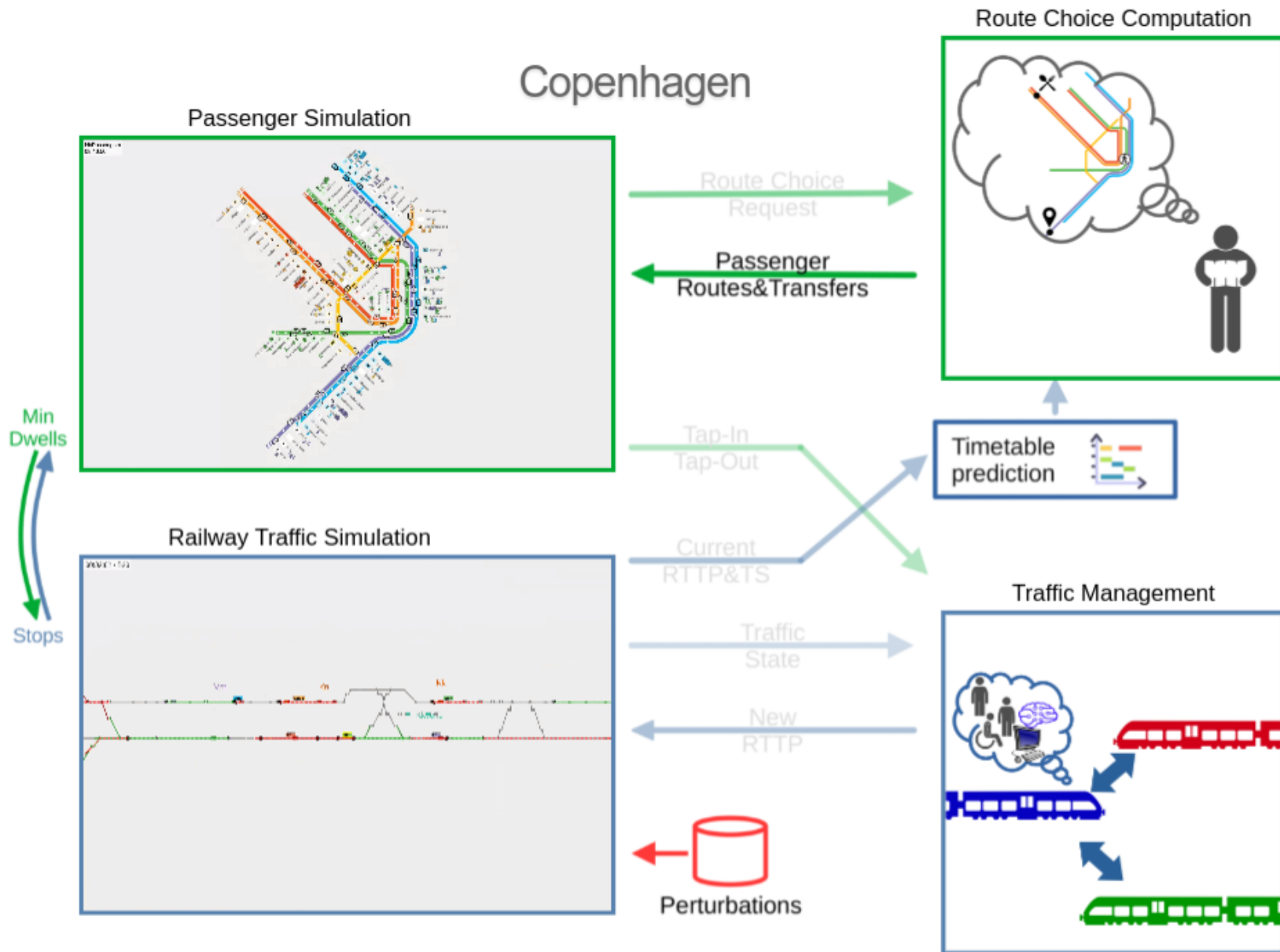


Guingamp-Paimpol



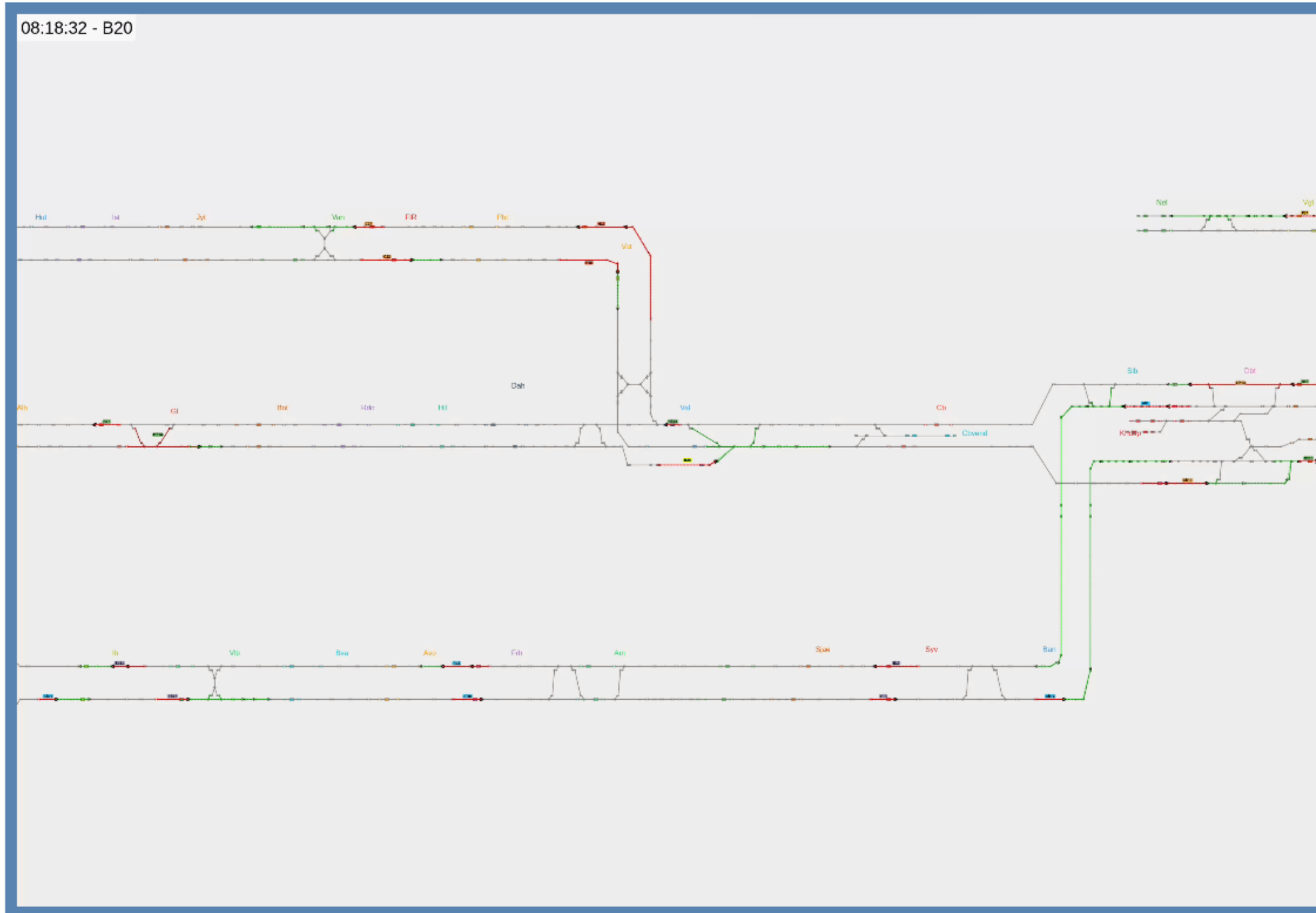
Pioltello - Rovato

Copenhagen



Railway Traffic Simulation

Stops



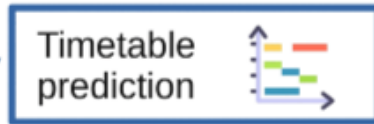
tion



Copenhagen



Route Choice Computation

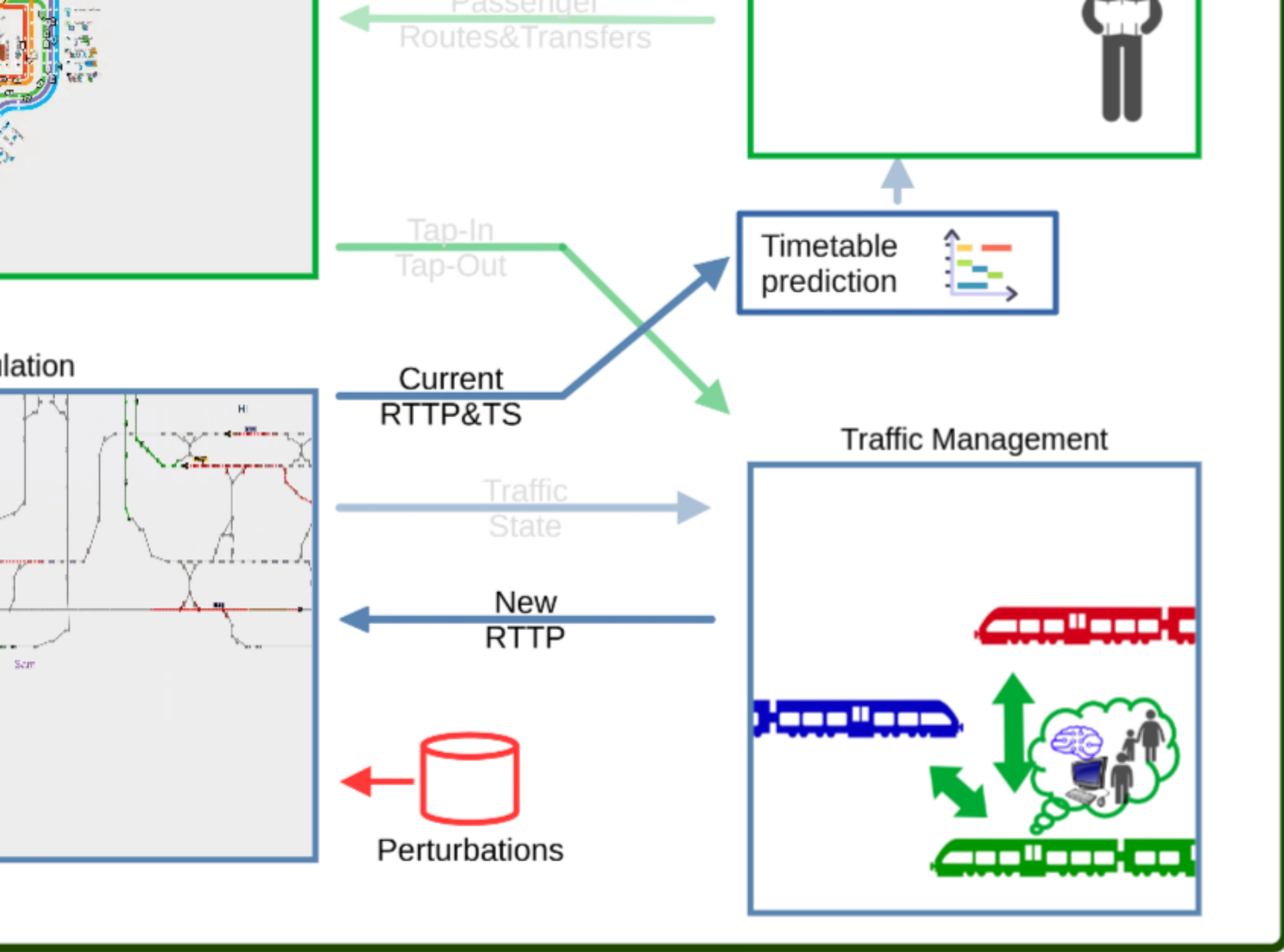


ulation

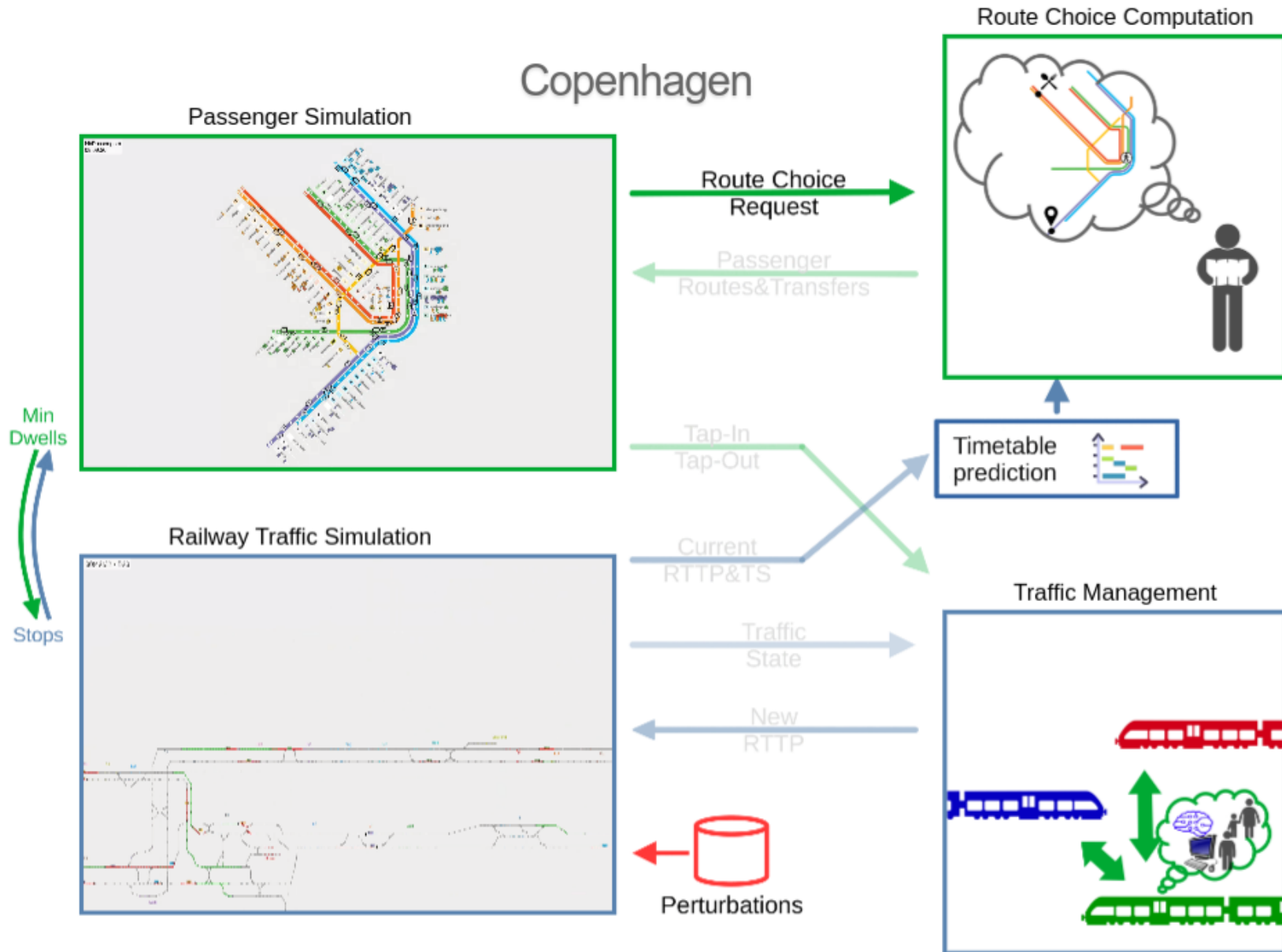


Traffic Management

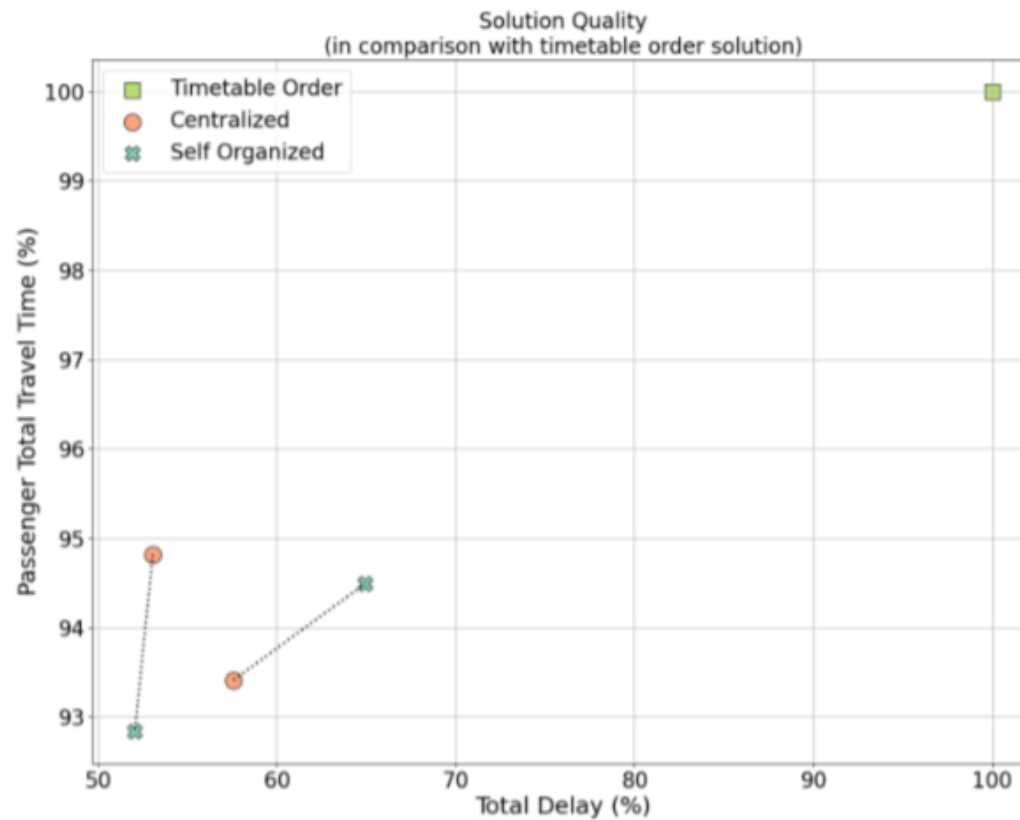




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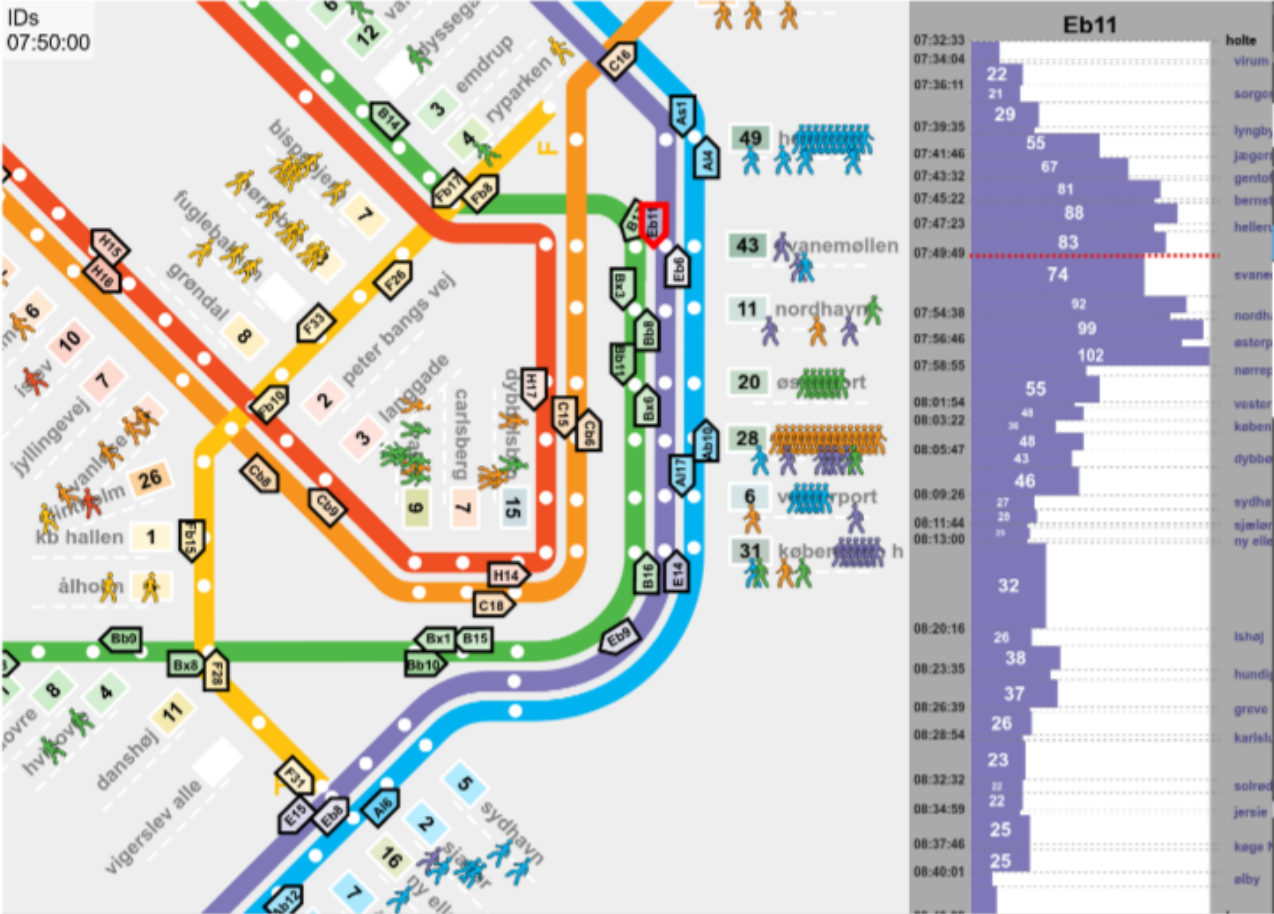


Results



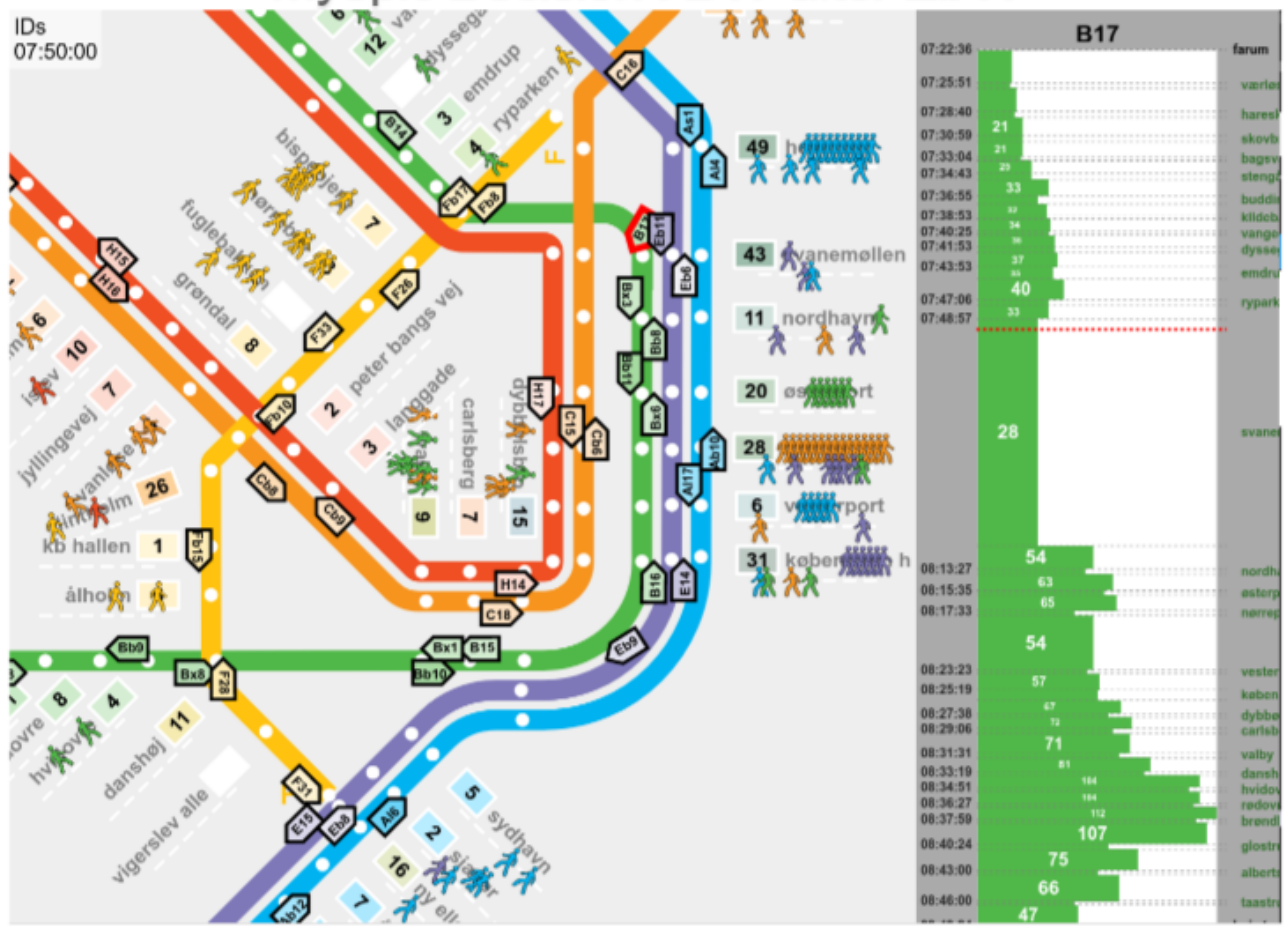
- Transport State Horizon : 20 min
- Re-optimization period : 10 min
- Perfect passenger arrival prediction
- Passengers decide their route at most 10 min before tap-in

Myopic Decision : Eb11 before B17



- Eb11 will carry a lot of passengers in the next 20 minutes
- But putting it in front will impact fewer passengers at the end of its journey

Myopic Decision : B17 after Eb11



- B17 is not carrying many passengers in the next 20 minutes
- But delaying it will penalize a lot of passengers at the end of its journey

Case studies and architecture

