



1Point2

Simulating underground, tram and bus networks.

SUCCESS STORY N° 7

⇒ ISSUES

- Simulate the trains' load and passenger waiting time.
- Anticipate the increase in the number of public transport users.
- Optimize timetables and number of vehicles.

⇒ SOLUTIONS:

- ExtendSim simulation model of underground, bus and tram lines.
- Analysis of the results depending on the number of passengers.
- Possibility to modify the supply : stopping points, timetables, types of vehicle.

⇒ ADVANTAGES

- The simulator has been an asset in renewing Lille's urban community's confidence in 1Point2 and ExtendSim.
- Great presentation tool thanks to Google Earth 3D animation.
- In the future, deployment of the simulator in other networks operated by Keolis.

Transpole and 1Point2 give a third dimension to their underground, tram and bus network simulation tool.

A first simulator of the city of Lille's underground network was created in 2006. The goal being to simulate the trains' load and the waiting time on the platform from various supply and demand scenarios.

Five years on, the simulator is a real success, internally and externally, so Transpole wished to extend the simulator's functionalities to anticipate new phenomena on the underground and other types of public transport (tram, bus).

In coming years, new projects will be conceived to facilitate passenger mobility: ticketing, doubling underground trains, creating several peak-time lines, tramway/train projects. Within the next ten years, these new lines will change the current network's structure.



The software ExtendSim is once again the heart of the simulation tool. With ExtendSim, thousands of daily travelers can be individually tracked, without losing time in calculations.

Two aspects of the simulator are also very important:

- The tool creates .kmz files animated by Google Earth to give understandable and convincing presentations.
- A simplified mode allows the urban community to test some scenarios itself.



animation réalisée par
Antoine Outeleux
1Point2
www.1point2.fr

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Google earth

Flow simulation is one of the most powerful tools used to analyze complex systems:

- ◆ **Understanding** the system's dynamics: how long (minimum/maximum time) does it take to get from one point to another? Where and when may long queues appear?
- ◆ **Anticipating** the operation of a new system, or **improving** the functioning of existing systems. Simulation can avoid making small or big mistakes!



With the results, available in MS Access or Excel, the situation on a given platform or train can be precisely analyzed.

With the graph opposite, we can follow the train which leaves at 7h31. The red curve indicates the number of passengers on the train. The blue status bars show the number of passengers getting on or off the train.



5, rue de la Poste
38170 Seyssinet-Pariset France

Std: +33 4 76 27 77 85
Fax: +33 4 76 27 24 67
infos@1Point2.com

To know more about us, visit our site:
<http://www.1Point2.eu/>

We assist industry managers with simulation to facilitate their decision-making process.

Trained in flow simulation in the United States and France, the **1Point2** team has been providing services, quality software, training and methodological assistance since 1987.

1Point2 is the exclusive distributor of ExtendSim in France, Belgium, Switzerland, Italy, Spain, Portugal and Greece.

Guillaume LAGAILLARDE
glagailarde@1Point2.com