CLAIMS

1. A method for predicting at least one indicator of ~~the~~ an operation of a passenger transport network, the network comprising a set of stations, each station comprising at least one platform for loading and/or unloading passengers in a transport vehicle of the network, the network being equipped with a system for recording, in association with an identifier, input/output data of the network, the method comprising a step, prior to a current time instant, of :

a) collection and storage (40) of input/output data of actual journeys made during a past observation window preceding the current time instant,

the method being characterized in that it comprises, for at least a first time interval included in the said observation window, steps of :

b) applying (42) an algorithm for estimating, from the said data collected during the said first time interval, at least one indicator of the operation of ~~a~~the passenger transport network, estimated during the said first time interval,

c) implementing (44) a plurality of automatic learning algorithms to calculate, for each automatic learning algorithm, from at least a subset of the data collected during the said observation window and prior to the said first time interval, at least one indicator of the operation of ~~a~~the passenger transport network, predicted for the said first time interval,

d) determining (46) a weighted mixture of the automatic learning algorithms, relevant at the current time instant, depending on the said predicted indicator of the operation of ~~a~~the passenger transport network and the estimated indicator of the operation of ~~a~~the passenger transport network for the said first time interval,

e) for at least one future second time interval, having a start time later than or concomitant with the current time instant, implementing (48) the said weighted mixture of the automatic learning algorithms to calculate at least one predicted operation indicator related to each second time interval.

2. The method according to the claim 1, wherein the said indicator of the operation of ~~a~~ the passenger transport network is selected from an average waiting time for each network platform, an average load in number of passengers waiting on a network platform, an average load, in number of passengers, per transport vehicle.

3. The method according to one of the claims 1 or 2, wherein steps b) to e) are repeated with a predetermined time frequency.

4. The method according to any one of the claims 1 to 3, wherein the plurality of automatic learning algorithms comprises decision methods based on forests of decision trees and gradient regression methods.

5. The method according to the claim 4, wherein step c) of implementing a plurality of automatic learning algorithms comprises an implementation of the same automatic learning algorithm with several subsets of different input/output data collected during time observation sub-windows of different duration.

6. The method according to any one of the claims 1 to 5, further comprising a prior step of learning parameters for each automatic learning algorithm, using data over at least one, long learning period, of duration greater than one month.

7- A flow regulation method for a passenger transport network, the network comprising a set of stations, each station comprising at least one platform for loading and/or unloading passengers in a transport vehicle of the network, the network being equipped with a system making it possible to record, in association with an identifier, input/output data of the network, the network also comprising one of ~~the~~ an electronic equipment and a supervision and computing center adapted to communicate with the said equipment, the flow regulation method being characterized in that it comprises, at a current time instant :

-prediction (60) of at least one network operation indicator according to a prediction method complying with any one of the claims 1 to 6 ;

-use (62, 64, 66, 68) of the said at least one network operation indicator for regulating the flow of passengers in the network.

8- The method according to the claim 7, wherein the use step comprises steps of:

-calculation (64) of at least one network operation parameter from the predicted operation indicator(s),

-transmission (66) of the said at least one parameter or a related command to at least one electronic equipment in the network,

-modification (68) of ~~the~~ an operation of the said electronic equipment according to the said parameter.

9. The method according to the claim 7, wherein the use step comprises publishing (62) of the said at least one operation indicator to user equipment adapted to communicate wirelessly.

10. A computer program comprising software instructions which, when implemented by a programmable electronic device, implements a method for predicting at least one indicator of the operation of a passenger transport network according to the claims 1 to 6.

11. ~~The~~ A system for predicting at least one indicator of ~~the~~ an operation of a passenger transport network, the network comprising a set of stations, each station comprising at least one platform for loading and/or unloading passengers into and/or from a transport vehicle of the network, the network being equipped with a system for recording, in association with an identifier, input/output data of the network, the system comprising a module for collecting and storing input/output data of actual journeys made during a past observation window preceding a current time instant,

the system being characterized in that it comprises at least one calculation processor adapted to implement, for at least a first time interval included in the said observation window :

-a module (24) for applying an algorithm for estimating, from the said data collected during the said first time interval, at least one indicator of the operation of ~~a~~the passenger transport network estimated during the said first time interval,

- a module (26) for implementing a plurality of automatic learning algorithms to calculate, for each automatic learning algorithm, from at least one subset of the data collected during the said observation window and prior to the said first time interval, at least one indicator of the operation of the~~a~~ passenger transport network, predicted for the said first time interval,

- a module (28) for determining a weighted mixture of the self-learning algorithms, relevant at the current time instant, as a function of the said predicted indicator of the operation of ~~a~~the passenger transport network~~s~~ and the estimated indicator of the operation of ~~a~~the passenger transport network for the said first time interval,

- for at least one future second time interval, having a start time later than or concomitant with the current time instant, a module (30) for implementing the said weighted mixture of relevant automatic learning algorithms determined to calculate at least one predicted operation indicator related to each second time interval.