CLAIMS

1. A method for controlling an elevator system having at least one elevator, call-giving devices for giving calls to the elevator system, and a control system that is responsive to the aforementioned calls, comprising:

registering a call given by a passenger;

allocating an elevator serving the registered call in a first optimization phase such that a desired first cost function is minimized;

providing a second optimization phase for optimizing a route of the allocated elevator such that a desired second cost function is minimized;

controlling the allocated elevator according to the route;

updating the route of the elevator by repeating the second optimization phase during elevator service; and

making an assumption about a destination floor of the passenger;

wherein one of the first cost function and the second cost function comprises energy consumption, and the other of the first cost function and the second cost function comprises at least one of call time, waiting time, travel time, run time, and traffic intensity; and

wherein the assumption about the destination floor is that a default floor is a top most floor that the elevator

system serves when pressing an up call pushbutton, and the assumption about the destination floor is that the default floor is a bottommost floor that the elevator serves when pressing a down call button.

2. The method according to claim 1, wherein a genetic algorithm is used in the first optimization phase, and/or in the second optimization phase.

3. The method according to claim 1 or 2, wherein a collective control principle is used in the first optimization phase.

4. The method according to any one of the preceding claims, wherein the first cost function and/or the second cost function is minimized for at least one desired magnitude with a set boundary condition.