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Nikovski et al.

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(54) **SYSTEM AND METHOD FOR GROUP ELEVATOR SCHEDULING BASED ON SUBMODULAR OPTIMIZATION**

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(57) **ABSTRACT**

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Systems and Methods for controlling a movement of cars of an elevator system. A processor determines for each car an individual waiting time of each hall call. Determines for each pair of hall calls assigned for each car, a pairwise delay over the individual waiting time of each hall call in the pair caused by a joint assignment of the car to the pair of the hall calls. Approximate a cumulative waiting time of an assignment of the cars to the hall calls as a sum of individual waiting times for each hall call with the assigned car and a sum of all pairwise delays determined between all pairs of hall calls assigned to the same car. Determine the assignment of the cars using a greedy optimization algorithm that greedily assigns hall calls to the cars to minimize the approximated cumulative waiting time, and control the movement of the cars.

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(58) **Field of Classification Search**
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See application file for complete search history.

20 Claims, 6 Drawing Sheets

