

What is claimed is

1. A goods distribution scheduling method, which is applicable to a scene of package distribution in a building and comprises the following steps executed by a cloud server:

acquiring state information of a distribution robot and of a robot assembly station, and
5 acquiring order information of a package distribution task and operation data of a building elevator;

calculating a current load of the robot assembly station and remaining capacity of the distribution robot based on the state information of the robot assembly station and the state information of the distribution robot;

10 determining a distribution capacity requirement of a distribution task in a next cycle based on the order information of the distribution task and the operation data of the building elevator;

assigning the distribution task in the next cycle according to the distribution capacity requirement, the current load, and the remaining capacity to obtain an assigning result; and

15 generating a scheduling instruction according to the assigning result, and sending the scheduling instruction to the distribution robot, the robot assembly station, and the building elevator, such that the distribution robot, the robot assembly station, and the building elevator operate based on the scheduling instruction, the step of calculating a current load of the robot assembly station and remaining capacity of the distribution robot based on the state information of the robot assembly station and the state information of the distribution robot comprises:

acquiring storage space information of the robot assembly station, and determining a current load of the robot assembly station based on the storage space information;

25 acquiring load information of the distribution robot, and determining current capacity of the distribution robot based on the load information; and

determining the remaining capacity based on the current load and the current capacity;

the step of acquiring load information of the distribution robot, and determining current capacity of the distribution robot based on the load information comprises:

calculating capacity of one distribution robot using the following formula:

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$$M = \left\lfloor m * \frac{\min(e, w1) - w2}{e - w2} \right\rfloor$$

wherein M is capacity of one distribution robot, m is the maximum load, e is electric power that suffices to complete maximum-loaded tasks, w1 is current electric power, and w2 is reserve electric power; and

determining the current capacity based on the capacity of one distribution robot.

2. The goods distribution scheduling method according to claim 1, wherein the order information of the distribution task comprises historical order information and current order information, and the operation data of the building elevator comprises historical elevator operation data and current elevator operation data; the step of determining a distribution capacity requirement of a distribution task in the next cycle based on the order information of the distribution task and the operation data of the building elevator comprises:

acquiring the historical order information and the historical elevator operation data, and estimating an initial capacity requirement of each floor in the next cycle based on the historical order information and the historical elevator operation data;

acquiring the current order information and the current elevator operation data, and determining a current capacity requirement based on the current order information and the current elevator operation data; and

determining the distribution capacity requirement based on the initial capacity requirement and the current capacity requirement.

3. A computer device, comprising a memory, a processor, and a computer program stored in the memory and being executable in the processor; wherein the processor, when executing the computer program, implements the goods distribution scheduling method according to any one of claims 1-2.

4. A computer storage medium, wherein the computer storage medium stores a computer program therein, and the computer program, when being executed by a processor, implements the goods distribution scheduling method according to any one of claims 1-2.