

The principle of automatic storage battery loading into container





Overview

With the development of information technology, automation and intelligence techniques have gradually taken place of the manpower in container terminals. The automation of container terminals can impro.

Are battery-powered AGVs a problem in a container terminal?

Besides, battery management is an issue that can not be ignored, since battery-powered AGVs are widely used in the ACT. Although a few scholars have studied the performance analysis of container terminals, no scholar has studied the AGV's battery management in a container terminal. After working for a period of time, the batteries will be depleted.

How does a soqn work with a battery recovery station?

Fig. 3. An SOQN for ACT with a battery recovery station. An inbound container arrives at the system with an arrival rate λ in. The system first checks if there exists an available AGV, i.e., $Q R > 0$. If yes, the system assigns an AGV to the container randomly; otherwise, the container waits in the container queue $Q c$.

What is the operation process of transporting outbound containers?

The operation process of transporting outbound containers is a reverse process of inbound containers. Therefore, the description of the transporting process of outbound containers is omitted. After completing an outbound transportation task, the system will check if the battery is depleted.

Why do container terminals need automation?

As container terminals aim for more efficient operation and higher productivity, automation is making major strides all over the world. More and more container terminals are adopting automated solutions to meet the challenge of larger ships, taller cranes, and bigger call sizes.



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