Abstract

SYSTEM AND METHOD FOR TRANSPORTING MATERIALS USING TRANSPORTERS GUIDED BY SMART GUIDED VEHICLE

A master smart guided vehicle (SGV) equipped with an intelligent module for precisely locating and positioning a set of transporters dynamically assigned to transfer a load accurately and safely from one location to another. The SGV may comprise of Vision modules, a feed forward control method that uses sensors to detect disturbances or obstructions affecting the transporter movements and apply a feedback control input to the SGV to minimise the effect of the disturbance. Path planning software modules and artificial intelligence are utilised in the SGV to understand the environment it is operating in, and function independently without depending upon external instructions. The smart guided vehicle plays an important role in efficient material handling within a manufacturing and distribution operation. The material handling functions are performed safely and in a timely manner without causing any damage to the payload irrespective of its size and weight. The main factor attributing to material handling is reliability, consistency and dynamic workload distribution with minimal intervention from an external command centre such as a server or other device. Smart Guided Vehicle is controlled by intelligent software reinforced with Machine learning techniques that optimise workflows by automating repetitive material handling tasks, reducing bottlenecks by utilising the services of multiple transporter modules depending upon the task to be executed.

Fig 1