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## AUTOMATIC TOWING OF DEFECTIVE VEHICLES IN A DRIVERLESS TRANSPORT SYSTEM

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## AUTOMATIC TOWING OF DEFECTIVE VEHICLES IN A DRIVERLESS TRANSPORT SYSTEM

### **Technical task:**

In an automated guided vehicle system, it can happen that a vehicle with a defect can no longer continue its journey. Then the vehicle must be brought to a repair site with a recovery device. To do this, the incident must first be detected.

### **Solution:**

The new idea is to completely automate this process. The vehicles report their current status and position at regular short intervals. In the event of a defect, the last reported position is thus known. The defect can have different characteristics. It may be that the vehicle detects a fault condition itself and reports it to the master computer. But it can also be that it is a total failure and can no longer report. This does not matter, however, since the last reported position is known.

The vehicles now have a towing eye and hook, which may be hidden during normal operation.

If the vehicle has its own conveyor, e.g. a conveyor belt, and the conveyor is still functional, two functioning vehicles are sent to the defective vehicle. The first vehicle takes over the load of the defective vehicle and finishes its driving job. In case it was unloaded, this operation is of course omitted. If it has an active driving job to pick up a load, the first of the two vehicles takes over this job. The second vehicle then drives to the defective vehicle, locates the vehicle precisely, and then drives its tow hook into the cover of the eye and hooks it in.

Ideally, the coupling between the drive and the wheels is electrically switchable, for example, so that in the event of a total failure the coupling is open and the defective vehicle can be moved more easily. In the case of a mechanical coupling, it must be ensured that the coupling is opened by inserting the towing hook.

Now that both vehicles are mechanically coupled, the towing vehicle can take the defective vehicle to a repair site.

### **Advantage:**

Automated and faster removal of defective vehicles.