

CASE STUDY

UNIVERSITY MEDICAL CENTER HAMBURG-EPPENDORF, GERMANY



The Automated Guided Vehicle TransCar is the efficient solution for regularly repeated transportation tasks in hospitals.

The customer and the requirements

The University Medical Center Hamburg-Eppendorf (UKE) comprises more than 80 centers in 14 disciplines bringing hospitals, clinics, and institutes together. With 1,248 beds and 165 beds in the University Heart Center Hamburg GmbH, the Medical Center Hamburg-Eppendorf is one of the largest hospitals in Hamburg.

The hospital receives about 76,000 stationary patients annually. In addition, the hospital has also 257,000 outpatients and around 114,000 emergency patients.

A wide range of therapies and medical treatments can be carried out in Hamburg and only here – such as heart, lung, liver, kidney, and bone marrow transplants. Of the approximately 8,900 employees working at UKE, 2,138 are doctors and scientists. A total of 2,782 people work in the nursing area or as therapists. The Automated Guided Vehicle takes over the automated transportation of meals, laundry, waste, pharmaceutical and sterile containers at UKE Hamburg-Eppendorf.

The solution

System:	TransCar LTC 2-LC
Track length:	2,100 m
No. of vehicles:	33
No. of floors:	11
No. of stations:	91
Control:	TCMS
Transports per day:	approx. 800
Beds:	1,248
Commissioning:	2010



The solution

Altogether 33 radio-controlled electric vehicles transport approx. 350 available container carriers on 800 journeys a day from one place to another. A total of around 400 km (approx. 250 miles) are covered in this process. The entire regular supply and removal of goods is handled via this automatic goods transportation system designed as Automated Guided Vehicle (AGV).

Laundry and disposables, medication and food, sterile and non-sterile instruments, as well as the entire hospital waste – the robot cars pickaback everything, safely transporting goods to their respective destinations – 16 hours a day, seven days a week. With the resulting flexibility, even transportation at peak hours is smooth. Route and road map changes can be made at any time using laser technology and by changing software. This provides a high level of system flexibility.

The AGV is not only implemented in the new hospital but also in the buildings connected by the existing rebuilt underground tunnels. The goods distribution center as well as the pharmacy and kitchen stations form the junctions. Besides the new hospital building, the buildings of the pediatric clinic, the cardiac center, and the laboratory center are made accessible. The long distances in and between the individual buildings are covered underground. Separate goods elevators then lead up to the destination floors. Transport

delays are omitted by the separate logistic infrastructure, as the routes for the transport of goods do not intersect the routes for patients and patient transports, visitors, or professionals. The six container parking positions (container storages) are located in the goods distribution center, the new clinic and the building where both pharmacy and kitchen are situated.

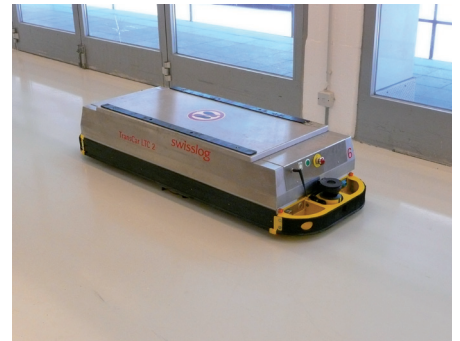
The battery-charging station for the vehicles is located below the new hospital building. The washing plants for the stainless-steel containers and the enclosed plastic containers are situated on the first floor of the goods distribution center.

The AGV communicates with the control system via the wireless local network (WLAN) of the university medical center. On their way through the building, the vehicles are guided by a laser scanner at so-called "reference points" of the building. The vehicles can even call elevators automatically.

As soon as a vehicle receives its destination in the supply room on the corresponding floor, a hospital employee receives a message on his portable personal computer (PDA), a technically advanced procedure that is already successfully implemented in industry, but is also used in many hospitals by now.

Benefits for the customer

Liberated from the task of transporting goods, hospital staff can



now chiefly concentrate on transporting patients, which was previously done by external companies to a large extent. In the stations, the AGV is supplemented by the module supply: current consumption is scanned and ordered automatically.

This in turn relieves the nursing staff. Thus, a complex part of the intralogistical chain is simplified by the AGV, which has a positive effect on the hospital's annual budget.

Benefits of the solution

- > Transparency and control of delivery status.
- > Higher quality through reliable delivery processes.
- > Just-in-time delivery of material.
- > Flexible transport processes via laser technology.

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