

## Effective healthcare logistics management in the Middle East

*Nowadays, healthcare facilities need efficient and effective logistics management to ensure that patients receive quality care.* In particular, one of the most significant challenges in healthcare logistics is the manual transportation of hospital trolleys, which are used to manage numerous services, including kitchen, laundry, waste, warehouse, central sterile services department (CSSD), and pharmacy. Mobile robots, mainly known as AGVs (*Automated Guided Vehicles*), identify a category of devices that increasingly contribute to the efficiency of the logistics chain in various sectors, from industrial to pharmaceutical, chemical and health care.

The manual handling of these activities may cause various operational inefficiencies, delays, as well as increased labour costs. *Oppent mobile robots offer several comprehensive and appropriate solutions to address these fundamental challenges.*

For more than 60 years, **Oppent has represented efficiency, effectiveness and professionalism in the field of service automation and logistics flow optimisation.** We not only manufacture products, but also *create solutions that meet our customers' needs.* Our models are ready to be adapted to any requirement to improve the quality of automation, transport and logistics in the Healthcare, Pharma and Industry sectors, integrating with production systems and digitisation of products.

In the **Healthcare sector**, our mobile robots are designed to handle the automatic transport of hospital trolleys to different areas of the building without requiring human intervention. Moreover, these innovative vehicles are capable of transporting all delicate medical equipment. It is a *solution that constant traceability, improving accuracy in the workflow.* These state-of-the-art technologies also contribute to reducing the workload of medical personnel, allowing them to concentrate on more critical tasks that require their specialised intervention.

Among many activities, *the automated transport of kitchen trolleys is the most critical service*, as it involves the timely and safe delivery of meals to patients. Furthermore, as kitchen trolleys are the heaviest due to the heating and cooling systems on board, the manual transport of these trolleys is particularly challenging for hospital staff. With a lifting capacity of 500 kg, *our vehicles can easily handle the weight of these trolleys, reducing the workload of hospital personnel.*

*Our mobile robots can also move laundry trolleys*, transporting clean and soiled linen to and from selected areas, **ensuring that a hygienic environment is maintained.** Furthermore, the vehicles are able to move waste from different points in the hospital to deposit it in the central collection area, **reducing the risk of cross-contamination.**

Compared to other measurement systems based on signs attached to wheels or building surfaces, **our vehicles use safety lasers to measure the route.** Maps of the route are then loaded into the mobile robots' on-board computer, containing the necessary reference points (e.g. walls and pillars) for the vehicle to move within the space. The different types of laser scanners, positioned either diagonally or laterally, also guarantee maximum safety: in the event of obstacles entering the laser protective field or contact with a bumper, *the braking device is activated, even with a loaded hospital trolley.* Oppent mobile robots are indeed equipped with tactile sensors (bumpers) as well as 3D cameras to detect all obstacles: *these features ensure that the vehicles can operate safely and efficiently in any healthcare facility.*

Our mobile robots are controlled by a **management software that provides real time monitoring and tracking of the vehicles.** The software allows operators to follow their location, battery levels as well as the progress of activities. It also provides detailed reports on vehicle utilisation and performance for further optimisation of logistics operations. Our mobile robots **can easily integrate with communication systems within the hospital** (Wi-Fi and mobile networks); this allows them to move around the facility (even by means of lifts), significantly reducing time and thus improving operational efficiency. Additionally, our mobile robots are equipped with an automatic recharging function with lithium batteries, enabling them to *operate 24 hours a day, 7 days a week.* They are able to return to the charging station and automatically power their batteries, ensuring their availability at all times without interruption.

Our teams always work together with their customers, taking care of every single detail. Each of our projects is a special case because our customers' needs are unique. And to meet them, **we design and implement solutions that are always new and measurable.** An R&D team is dedicated to explore the frontier technologies and dialogue with research partners and at our customers, to imagine innovative applications for their production quality requirements.

Particularly, **Oppent Middle East DMCC (Dubai/UAE)** has successfully implemented *three interesting projects in the Healthcare market*, one in Turkey, a second in Bahrain and the third in Qatar. These cases demonstrated the effectiveness of mobile robots in improving patient care, reducing labour costs and optimising the operational efficiency of healthcare logistics.

*The first reference project was carried out in the **Acibadem Maslak Hospital in Istanbul (Turkey)** in 2017-2018.* To the complex need of transporting drugs, consumables and sterilisation, catering, linen and waste, Oppent responded by designing a fleet of 9 mobile robots with specific characteristics. They are featured by bi-directional kinematics implemented on a steel frame as well as laser sensors capable of generating vertical and horizontal observation that varies according to the speed and shape of the environment.

*For the second reference installation, Oppent built a fleet of five mobile robots for the **American Mission Hospital in Al Ahli (Bahrain)** in 2021-2022.* The successful project demonstrated the vehicles' effectiveness in improving patient care and optimising hospital logistics. The fleet of vehicles was made available for visits by all interested healthcare professionals in the region, who had the opportunity to observe the benefits first-hand. *Oppent Middle East DMCC (Dubai/UAE), led by Regional Director **Ozgur Salih Mutlu**,* provides quality services through our teams of automation experts available 24 hours a day, 7 days a week for remote and on-site support. Our mobile robots provide an innovative and effective solution to the challenges of managing hospital services, and in particular the manual transport of trolleys.

*The integration of Oppent distinctive vehicles into healthcare logistics can greatly contribute to optimising the way hospitals operate and provide care.*

**Customisation of platforms, technological reliability of solutions and high quality of service are trademarks of a company rooted in history but looking to the future.**