



# TUG

## Smart Autonomous Mobile Robot

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## **24x7 Improved Productivity**

TUG works around the clock. It is a substitute for the labor needed to haul and transport goods, materials and clinical supplies within the hospital.

## **Improved Patient Experience**

Staff can spend more time with patients or assist nursing instead of transporting goods. More time with patients translates to better care and improved patient satisfaction scores.

## **Secure**

Integrated drawer and door carts provide biometric security plus pin code access to protect and ensure secure delivery of sensitive medications or laboratory specimens.

## **Worker Safety & Employee Satisfaction**

Injuries sustained while moving heavy loads are common. Employees often express relief when they no longer have to transport awkward carts.

## **Patient Safety**

When clinical staff become distracted to look for missing materials or medications, they make mistakes and patient care suffers. If they are preoccupied with logistics tasks, they are unable to spend that time attending to the needs of the patient.

## **Enhances the High-Tech Hospital**

The TUG is a highly visible investment as it travels the halls, rides elevators and audibly speaks while performing its tasks. Hospitals using the TUG are serious about improving efficiency. It enhances their reputation as being on the leading edge of medical care.



# Proven, Reliable & Effective



TUG is a smart autonomous mobile robot that has become a common sight in hospitals as it delivers materials and supplies. TUG efficiently delivers medications, lab specimens, food, and linens and removes trash and waste. It has a measureable ROI and provides tangible improvements in care.

**Using it is simple:** Load the cart and touch a screen to send it to a destination, or even multiple destinations. Hospitals who use TUGs improve efficiency and focus staff on higher-touch patient care and value-added services.

# TUG

## One Platform, Multi-Purpose

TUG can be used by any department that needs to transport materials to the point of use. A wide variety of carts can be rolled onto its stainless steel lift for delivery. Materials that must be secured can be delivered using integrated drawer or door carts enabled with biometric access and pin-code security.

### Pharmacy

- Delivers medications securely and provides chain-of-custody control through a biometrically secured drawer cart
- Frees up staff to focus on clinical care activities rather than the transport of medications



### Laboratory

- Delivers blood or tissue specimens from remote collection points to a main lab using a biometrically secured door cart
- Allows clinical staff to remain closer to care units rather than taken off task to transport specimens



### Food Services

- Delivers trays of food from the kitchen and returns dirty trays from unit using detachable meal tray carts
- Facilitates 'concierge' or 'room service' models



### Linens

- Delivers clean linen using detachable multi-shelf racks and returns dirty linen using detachable tall bins
- Supports both replenishment and exchange models



### Environmental

- Transports trash or regulated waste in detachable covered bins
- Carts are compatible with automatic tippers



### Turnkey Installation

Aethon provides all technical and installation services to help you plan the most efficient uses for your TUGs, map routes through your hospital, design elevator and door controllers, and can even provide carts as needed. The installation process is non-invasive and hassle-free.



## 24x7 Cloud Command Center

Every TUG is monitored 24/7/365 remotely in our Pittsburgh-based support center. Algorithms monitor the status of each TUG in real time and, if a TUG needs support, an alert is sent to an on-duty support staff member. Support team members can connect to the TUG over the internet to assess the situation and control the TUG remotely if necessary.

## Smart Technology For Existing or New Projects

TUG is perfect for both new construction and existing construction. By using smart, autonomous navigation technology TUG is able to deliver payloads directly to point-of-use locations rather than intermediate stations. Unlike AGV systems, it does not require extensive infrastructure planning, tracks, or wires is able to use existing and shared elevators and does not require a built-in 'beacon' system to navigate. In fact, most of today's TUG installations were completed in existing facilities.

## Specification Chart

Maximum Towing Capacity	1000 lbs
Battery Run Time	10 hours with intermittent charging
Torque	26 oz/in
Navigation	Overlapping laser, sonar and infrared sensors
Communications	WiFi or 900MHz; Remote to Command Center
Turning Radius	Center 31.7"
Docking Station Width	24" plus 12" clearance
Environmental	Interior use

## How it Works

TUG has a map of the hospital stored in its memory and uses a scanning laser and 27 infrared and ultrasonic sensors to detect and model the environment in real time to maintain accurate position and avoid obstacles. The TUG communicates through the wireless network to control elevators and doors as

well as respond to fire alarm systems. TUG automatically returns to its charging dock after completing a delivery.





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## About Aethon

### Leader in intralogistics automation.

Founded in 2001, Pittsburgh-based Aethon has become a proven leader of intralogistics automation through its turnkey platform, which includes TUG, an autonomous mobile robot to automate physical deliveries and MedEx, a software solution to secure and track deliveries in real time. By automating a hospital's internal logistics processes, staff members are able to spend more time on higher-value patient care activities. Every hospital has unique challenges. Aethon provides a hands-on consultative approach to analyze the needs of each department and provides a clear, cost-benefit analysis and workflow redesign program.



### Made in the USA

TUG robots are proudly designed, manufactured and supported in Pittsburgh, PA.