



## AUTONOMY FEATURES

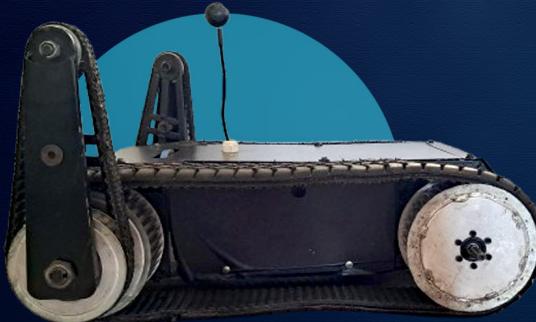
- **Navigation:** Semi-autonomous with obstacle avoidance; manual override available for precise control

## APPLICATIONS

- **Aircraft Inspection:** Ideal for external inspection of aircraft, focusing on composite structures, especially the belly part.
- **Versatility:** Applicable for inspections in confined spaces, under vehicles, and other hard-to-reach areas.

## ADDITIONAL FEATURES

- **Human detection:** using thermal camera and Co2 sensor
- **Modular Design:** Allows for easy attachment and replacement of sensors and tools.
- **Safety Features:** Emergency stop button, obstacle detection, and automatic return to home.



SCHOOL OF  
ENGINEERING  
AMRITAPURI

# SEARCH AND RESCUE (SAR) TELE-OPERATED ROBOT

Revolutionizing  
Inspections with  
Precision and Safety

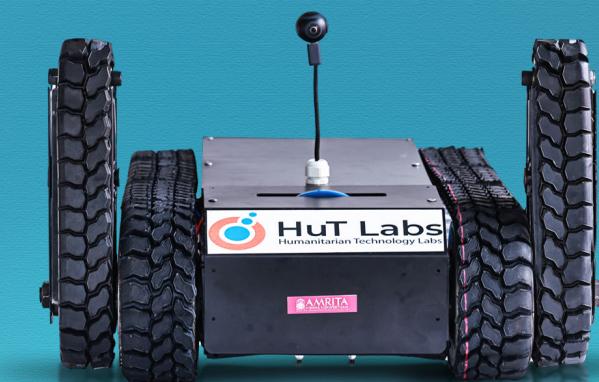
**Compliance:**  
Meets relevant aviation and safety standards for inspection equipment.

### Contact Information

+91 8086673701

**Website**  
[megararobotics@gmail.com](mailto:megararobotics@gmail.com)  
[www.megararobotics.com](http://www.megararobotics.com)  
Megara Robotics Pvt. Ltd.

**Address**  
No. 14, Periyar Salai,  
Anayanvaram,  
Chennai 600023, India



"Empowering Safe and Efficient Inspections."

## GENERAL SPECIFICATIONS

- Robot Type:** Tele-operated mobile robot for search and inspection
- Dimensions:** 80 cm (L) x 50 cm (W) x 40 cm (H)
- Weight:** Approximately 35 kg
- Power Supply:** Rechargeable lithium-ion battery
- Battery Life:** Up to 6 hours of continuous operation
- Charging Time:** 2-3 hours
- Control Interface:** Remote control with real-time video feed and sensor data display



## MOBILITY FEATURES

- Multi-Terrain Capability:** Track belt system for enhanced traction on various surfaces (e.g., stairs, slopes, oily and rocky terrains).
- Flipper Mechanism:** Equipped with flippers for maneuvering over obstacles like stairs, providing stability and flexibility.

## SENSORS AND INSPECTION CAPABILITIES

- Visual Inspection:** Dual high-resolution cameras with PTZ for detailed imaging.
- Thermal Imaging:** Infrared camera for detecting overheating and anomalies.
- Ultrasonic Sensors:** Detects cracks and material delamination. Corrosion Detection: Integrated sensors identify surface corrosion.
- Environmental Sensors:** Measures temperature, humidity, pressure and CO<sub>2</sub>.

## DATA LOGGING AND REPORTING

- Storage:** Onboard data storage for inspection records.
- Wireless Transmission:** Real-time data transfer to ground station for immediate analysis.

## OPERATIONAL PARAMETERS

- Speed:** Adjustable up to 1.5 m/s.
- Climbing Angle:** Capable of climbing up to 45°.
- Operating Temperature Range:** -10°C to 50°C.
- Ingress Protection:** IP67 rated for dust and water resistance.

## COMMUNICATION AND CONTROL

- Range:** Up to 60 meters (line of sight).
- Control Method:** Wireless remote with optional tethered mode.
- Video Transmission:** Low-latency feed to the operator's control unit.

