AURORA™ is a portable, tele-operated, reconnaissance or search and rescue robot system for hazardous urban environments. AURORA can be used in firefighting, police, explosive-ordinance disposal, counter-terrorism, and military reconnaissance or search and rescue applications. The robot has a unique mono-tread which results in a light-weight, steerable, compact unit. AURORA weighs less than 20 lbs, and measures only 24”L x 6”W x 4”H. AURORA moves like a caterpillar and is capable of climbing obstacles, ditches, steps, curbs, etc. without sacrificing capabilities previously only available from larger and heavier platforms. The system is battery-powered with a wireless data and video system, allowing for rapid deployment in remote, hazardous, and difficult urban terrains. A compact, and light user-interface allows the user to control the unit remotely.

AURORA is based on a flexible mono-tread guided belt, surrounding a submersible environmental enclosure which houses sensing, computing, control, and communications systems. The system can climb 100% grades at 0.5 m/sec, and is capable of achieving 1.7 m/sec on flat terrain. The unit uses built-in panning cameras inside lateral clear domes for side views, and an antenna-deployable camera and microphone system for low down and perspective data gathering. The on-board rechargeable lithium-ion battery pack provides operating ranges of 4 to 8 hours. The system provides state feedback (roll, pitch, heading) as well as live NTSC video and audio at the user interface. The system is readily upgradeable to (semi-)autonomous operations based on user requirements. Additional bays and add-on ports allow for customized mission-packages to be added to suit customer requirements.

AURORA is being developed with support from the US Government. A working prototype is available for demonstration.

Please contact us for additional technical information.

SPECIFICATIONS
Size: 24”L x 6” W x 4”H
Weight: <20 lbs., portable
Speed: Variable, 1.6 m/sec max
Power: Li-ion rechargeable battery pack
Computing: PC-104, Intel PIII
Locomotion: Steerable tread
Obstacles: up to 10”H
Grades: +/- 100% @ 0.5 m/sec
Enclosure: Sealed, submersible
Sensors: Roll, pitch, heading
Safety: Tip-over & self-righting
Materials: Aluminum, urethane
Feedback: Wireless audio/video
Communications: Wireless RS144/e-net
Interface: Miniature console