iRobot®

The robot for infantry missions

Available now for deployment to today's infantry

Why XM1216 SUGV?

- Meets the demanding requirements of infantry missions
- Lightweight and compact, fits in a MOLLE pack
- Ideal as a point man and forward observer
- Wearable controller and heads-up display ideal for patrols and dismounted operations
- Game-style hand controller reduces training time
- Easily climbs stairs and overcomes obstacles
- Thermal camera captures monochrome images in the dark and through smoke, fog and battlefield obscurants
- 312x optical zoom camera enables day and night surveillance
- Two-way audio provides downrange communication
- Laser rangefinder determines the distance to targets of interest
- Modular design accommodates optional sensors and payloads, including a dexterous manipulator

The advanced wearable controller and heads-up display are ideal for dismounted operations.

SUGV Qualification Testing

U.S. Army Test Center, Aberdeen Proving Ground, *Maryland*

- Environmental Qualification
- Performance Characterization
- System Reliability Assessment

White Sands Missile Range, *New Mexico*

- System Operational Assessment

What people are saying about XM1216 SUGV

"SUGV is probably the best [equipment] of the CP 11 that we have. [It] gives us a better stand-off to actually see what's coming up ahead rather than put actual soldiers up in the front and be surprised. The SUGV actually does save lives."

— Sgt. 1st Class Jason Ramsay of Scout Platoon Headquarters Company, 2nd Infantry Battalion in army.mil

[T]he SUGV was dropped into a concrete tunnel about 20 feet deep. It maintained its link to its operator… and that, one of the soldiers said, was what it was all about. He wouldn't have to crawl through a tunnel with his 9mm pistol in hand, hoping there weren't any booby traps or insurgents waiting for him as he had to do in Iraq.

— DOD Buzz, 9/20/2010

iRobot®

XM1216 SUGV

The robot for demanding infantry missions

Adaptable and expandable, XM1216 SUGV accommodates a wide range of optional payloads and sensors, including a dexterous manipulator. XM1216 SUGV is available with multiple controller options, including wearable controllers, heads-up displays and game-style hand controllers that are ideal for dismounted mobile operations.

Robot Specifications

Robot Dimensions

Height	• 6.5" (16.5 cm) chassis height when stowed • 26" (66 cm) fully extended
Width	• 13.7" (34.8 cm) without flippers • 17.2" (43.7 cm) with flippers
Length	• 23.9" (60.7 cm) with flippers stowed • 30" (76.1 cm) with flippers extended
Weight	• 32 lbs (14.5 kg) with no payloads

Mobility

Speed	• 6.2 mph (10 km/h)
Slopes	• 30% (17 deg) lateral • 84% (40 deg) climb (friction dependent)
Vertical Obstacles	• 12" (30.5 cm)
Stair Climbing	• Rise 8" (20.3 cm) • Run 10" (25.4 cm)
Water Traverse	• 6" (15.2 cm)

Communications

Wireless Range (LOS)	• 3280' (1000 m)
Radio Frequency	• 2.4 GHz / 4.9 GHz COTS • Modular radio interface accommodates future radio upgrades

Cameras and Illumination and other sensors

Chassis Camera	• Wide angle, fixed focus used for driving and stair climbing • Resolution: 640 x 480 • Field of view: 107° • Responds to IR Illumination
Color Zoom Camera	• Sony 980 • Zoom: 312x (26x optical / 12x digital) • Resolution: 640 x 480 • FOV: 42° to 1.6° • Auto focus / auto iris • Low light capable • Additional controls: shutter, focus • Responds to IR Illumination
Drive Camera	• In head • Same specs as Chassis Camera
Thermal Camera	• Zoom: 3 step digital zoom • Resolution: 320 x 240 • FOV: 50° • Fixed focus
Illumination	• IR
GPS	• COTS
Laser Range Finder	• Range: 1 km • Wavelength: 1550 nm • Class 1 eye safe • Invisible to naked eye • Invisible to NV goggles
2-way Audio	• Speaker / microphone in head
Neck (True Pan / Tilt)	Extension: 20" (51 cm) Degrees of Freedom (DoF): • Shoulder: 180° Pitch • Tilt 1: +/- 180° Pitch • Pan: 360° continuous rotation • Tilt 2: +/- 180° Pitch

Design and Construction

Size:	• Fits within one standard MOLLE or ALICE pack
Power Source	• 2 BB-2590/U Batteries — more than 6 hours of operation • Tool-less battery installation / removal
Payload Interface	• Interface for manipulator and fiber optic spooler
Maintainability	• Easy field maintenance LRU strategy

Controller Specifications

Choose either a basic or advanced wearable controller:

BASIC Wearable Controller	• Weight: 6 lbs (2.7 kg) • Display: Tac-Eye™ heads-up glasses • Resolution: SVGA (852 x 600) • Sunlight readable • Controller: game-style hand controller
Advanced Wearable Controller	• Weight: 14 lbs (6.4 kg) • Display: Tac-Eye™ heads-up glasses • Resolution: SVGA (852 x 600) • Sunlight readable • Rugged hand controller • Noise reducing headset • Camelbak® enclosure

These additional options are also available:

Heads-Down Rugged Controller	• 5.6" LCD display screen • Resolution: WXGA (1280 x 800) • Sunlight readable • Joystick-style control
Monitor Display	• Weight: 1 lb, 1 oz. (0.482 kg) • Display: 5.6'' (14.2 cm) diagonal screen size • Resolution: NTSC: (960 x 234) / PAL: (960 x 276) • For indoor use • Rugged or non-rugged hand controller

Optional Manipulator

Extension:	24" (61 cm)
Lifting capacity:	• 7 lbs (3.2 kg) fully extended • 15 lbs (6.8 kg) close-in
Degrees of Freedom (DoF):	• Shoulder: 180° Pitch • Elbow: +/- 180° Pitch • Wrist: 360° continuous rotation
Gripper:	• 5" (12.7 cm) parallel jaw opening • 35 lbs (15.9 kg) grip strength
Camera:	• Wide angle, fixed focus • Field of View: 100°

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