

the SmartTrakk

An application of the MIC Owl Autonomy Unit, the **SmartTrakk** is Mobile Intelligence Corporation's (MIC) autonomous tracked robot. Built on the SuperDroid commercial ATR-HD2 platform, the **SmartTrakk** integrates MIC's Owl autonomy unit and Perch platform controller to provide unparalleled capabilities in an autonomous ground robot. The **SmartTrakk** is standards-compliant, supporting JAUS/AS-4 global commands, camera commands and status commands. The **SmartTrakk** is autonomous, with the Owl providing stereo-based obstacle avoidance, tactical route planning, and moving object tracking and GeoLocation. The **SmartTrakk** is fully integrated with MIC's Multi-Platform Controller (MPC) operator control unit providing interoperability with the Army's FBCB2 system. Communications are UDP or TCP, over any IP radio system, with 802.11g as the commercial-grade default.

The **SmartTrakk** accepts JAUS/AS-4 Global Waypoint commands and communicates with the Owl, which uses a high-resolution stereo camera to build maps, avoid obstacles and plan a safe path through complex terrain. The Perch controller interfaces with the platform hardware (motor controllers and optical encoders) and manages robot localization using an inertial measurement unit, data from the motor encoders and, when available, a GPS receiver. The optional MIC TrakkR target tracker includes a pan/tilt unit housing a 40x zoom Sony Block Camera, combined with a fixed-beam laser range finder for precise target tracking and GeoLocation and is controlled using JAUS/AS-4 Camera Pose and Capability commands.



MIC SmartTrakk
(Optional TrakkR Shown)

Features

- Built on the SuperDroid ATR-HD2 Platform
- Accepts JAUS/AS-4 Global Waypoint Commands via 802.11 wireless link
- Includes MIC Owl Stereo-based/Autonomy Unit for obstacle avoidance between waypoints
- Includes MIC Perch Controller for accurate platform control and localization

Optionally includes MIC TrakkR Pan/Tilt Controller for high-speed dynamic target tracking and GeoLocation (as shown)

Specifications

for Model# MIC.SMARTTRAKK01

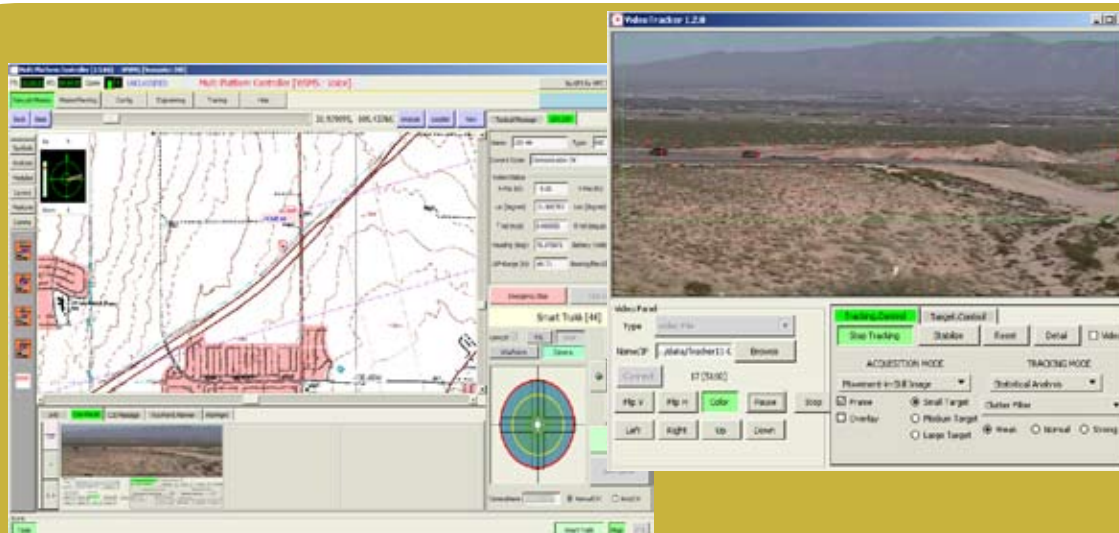
Platform		
Weight	110 (49.8)	lb (kg)
LxWxH	38x19x34 (97x48x86)	In (cm)
Max Speed	2.7 (4.4) [4 (1.2)]	mph (km/h) [ft/s (m/s)]
Battery Life	3.0	Hrs
Operating Voltage	24	Volts
IMU	MicroStrain 3DM-GX1	
GPS	Garmin 18-5Hz	
Localization Frequency	10	Hz

MIC Owl		
Camera	Point Grey Bumblebee II	
Processor	Intel Core 2 Duo 2.4 GHz	
Radio	Atheros miniPCI 600mW 802.11a/b/g	
Stereovision Range	50 (15)	ft (m)

Multi-Platform Controller (MPC) OCU Software		
OS Compatibility	Microsoft Windows XP, Vista	
Hardware Options	Rugged Laptop, Wearable or Handheld OCUs	
Integration	Compatible with the Army's FBCB2 System	
Display	Supports 1 to 3 screens	
Video Feed	Optional live video feed via Avalon analog radio	

OPTIONAL : MIC TrakkR Pan/Tilt Target Tracker		
Tracking Features	Autonomous statistical acquisition, camera PTZ control, multiple simultaneous target tracking, target geo-location	
Camera	Color, 40x Zoom, IEEE 1394 at 30 FPS	
Pan/Tilt Unit	300	deg/sec
Laser Range Finder	700 meter Range with +/- 1m accuracy	

Additional Options		
MPC Voice Controller	Hands-free control of MPC using MIC VoiceTrakk	
Route Planner	Automatic Asset Tasking and Route Planning using MIC IRP	
Messaging	Support for Tactical VMF Messaging	
Mapping	Support for Embedded WSMS MapService	



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