

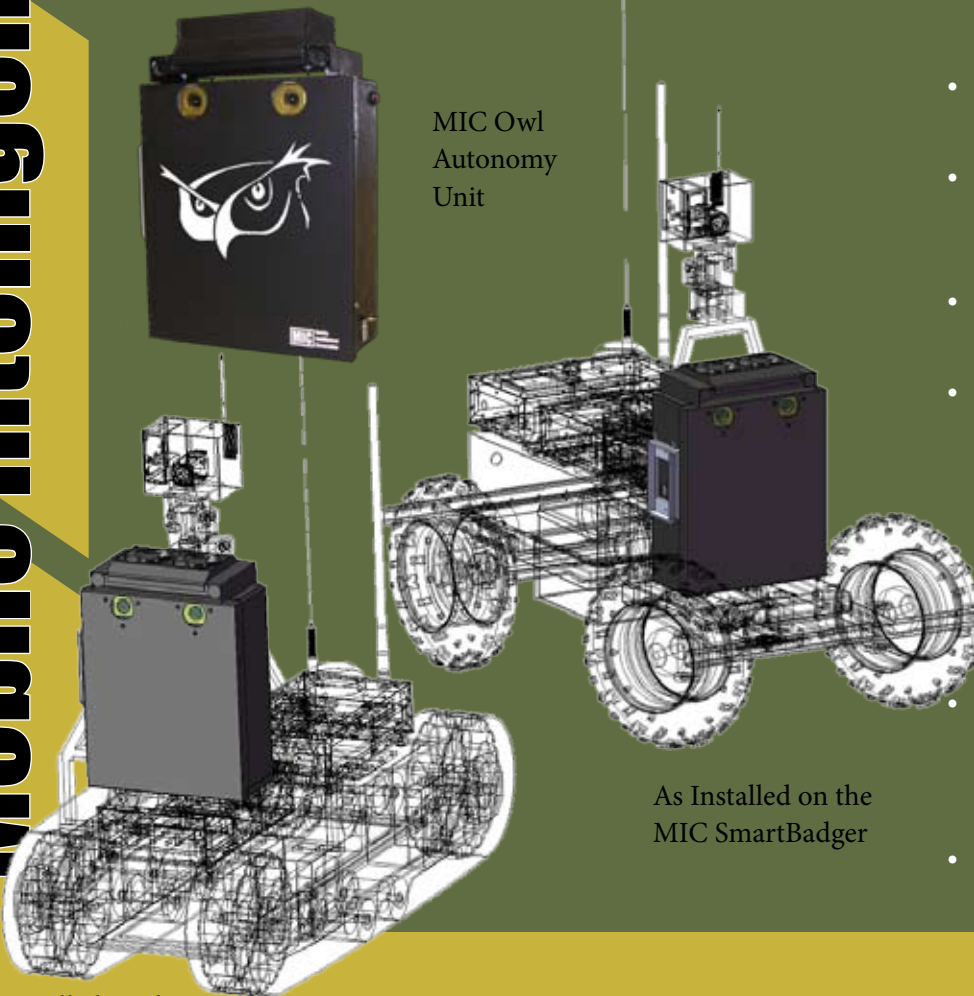
The **Owl** represents Mobile Intelligence Corporation's (MIC) most advanced autonomy unit for mounting on small, Commercial-Off-The-Shelf (COTS) unmanned ground vehicles (UGVs). The **Owl** provides JAUS-based command and control, acting as a JAUS "Pilot" unit, accepting global waypoints, planning safe routes, and sending real-time JAUS "wrench" commands to control the underlying platform. High speed stereo-based obstacle avoidance supports safe operations in complex terrain. This includes safely navigating to a visually designated location, and following the operator using Visual Tracking. Operator control is available using voice and/or easy to use graphics via MIC's MultiPlatform Controller (MPC).

The optional MIC Intelligent Route Planner (IRP) is integrated with an embedded WSMS map server to provide accurate MGRS Geo-Location data and registered imagery. DISA Standards compliant for Embedded Weapons/Sensor Systems, the **Owl** is Network Ready, supporting IP based UDP or TCP for multi-robot collaboration applications and through MPC, sophisticated graphics/image presentation and data overlays. It auto generates VMF and XML Cursor On Target (COT) Tactical Messaging for interoperability with the Army's FBCB2, ARDEC CDAS, and Falcon View C2 Systems. For commercial applications, 802.11g and custom data radios are supported.

The **Owl** provides an open, component based distributed architecture, allowing users to build on the provided software to tailor or augment existing modules for Collaborative Autonomy applications. The **Owl** software is provided with sample interface and operator UI source code and a tutorial for developing applications. An optional TrakkR subsystem for support of autonomous acquisition and tracking of multiple stationary and moving targets with "memory lookback" is available as an upgrade.

## Features

- Built on MIC's SARA robotics toolset
- Provides Collaborative Autonomy to work closely with the operator
- Provides Full Autonomy capabilities for remote operation
- Uses advanced stereo vision algorithms, route planners and a behavioral controller to safely navigate in complex environments
- Runs the Fedora Linux operating system and all software is written in C++
- Easy to tailor or augment the autonomy system to meet user requirements with or without source code
- Sealed, water-proof unit operates at ambient temperatures up to 110 °F (40 °C)



MIC Owl  
Autonomy  
Unit

As Installed on the  
MIC SmartBadger

As Installed on the  
MIC SmartTrakk

# Specifications

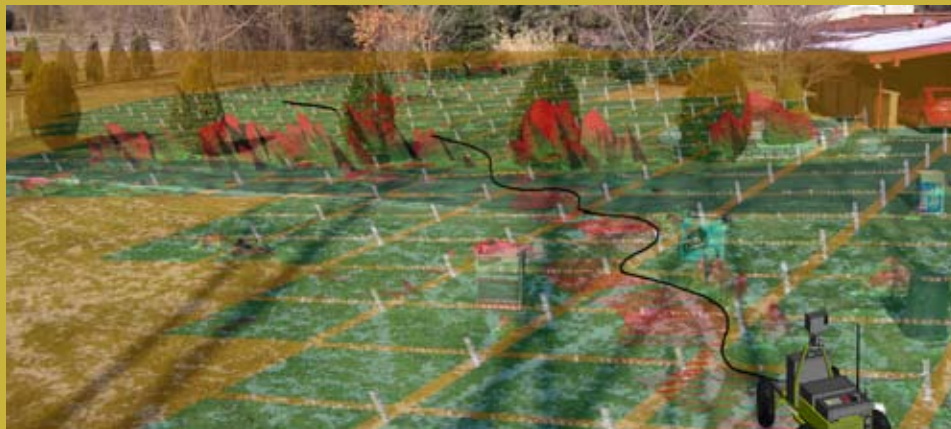
for Model# MIC.OWL01

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)
Recommended Safe Speed	5 (8) [7.3 (2.2)]	mph (km/h) [ft/s (m/s)]
Operating Voltage	12 or 24	Volts
Power Consumption	85	Watts (at full load)
Weight	9 (4)	lbs (kg)
LengthxWidthxHeight	4.25x10x12 (11x25x30)	inches (cm)
Operating Temperature	-20 to 110 (-30 to 40)	°F (°C)
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	
Voice Recognition	Supports MIC's VoiceTrakk voice recognition system	
Optional Route Planner	Supports the MIC IRP Intelligent Route Planner	

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	degs/s
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
Source Code License	Available
Customization	Software and Hardware available for customization

Stereo-based obstacle map and ground plane extraction overlaid on a photograph of the test site



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