

## Vector P™ UAV and VistaNav™ Ground Station Excel at USDA Forest Service/NASA UAV Demo

### Integrated Tactical UAS Solution

The USDA Forest Service and NASA co-sponsored a UAV Demo at Fort Hunter Liggett Army Garrison in California. The Garrison Fire Department set a series of test fires as part of a program to minimize the risk of runaway wildfires. At this demo, IntelliTech Microsystems and Mercury Computer Systems collaborated to provide an integrated, tactical unmanned aircraft system (UAS) that successfully demonstrated a live fire-monitoring solution, flying day and night missions over controlled fires set at distant locations on the grounds of the 165,000-acre garrison.



Carrying standard and thermal infrared video cameras, the Vector P™ unmanned aerial vehicle (UAV) from IntelliTech autonomously sought out fires set at locations five miles from the airport. Live video and telemetry data were transmitted from the Vector P to the Mercury VistaNav™ ground station. Over 70 government observers, who were present to assess the practicality and value of UAVs in fire-monitoring applications, viewed the live video and synthetic vision displays at the primary VistaNav ground-station location and remote wireless VistaNav displays.

Beyond fire monitoring, this integrated tactical UAS solution can be applied to a broad range of applications, such as border patrol, search and rescue, environmental monitoring, and precision agriculture.

### Low-cost, COTS-Based UAV Meets High-Performance Requirements

The Vector P is a small, low-cost UAV capable of either remote-control operation or fully autonomous flight. The Vector P can carry a wide variety of scientific and surveillance payloads to accomplish a broad range of missions – day or night – including:

- Aerial mapping
- Aerial surveillance for land and sea
- Environmental monitoring and air sampling
- Law enforcement
- Meteorology
- Pipeline and power-line inspection
- Precision agriculture
- Remote sensor and payload drop
- Tactical firefighting
- Search and rescue

For this demo, the Vector P carried two cameras. The first was a 320 x 240 pixel resolution, uncooled, long-wave infrared camera. Utilizing a 25µm pitch VOx focal plane array operating at a 60-Hz frame rate, the IR camera provided NTSC format analog video output, with 12-bit digital video available. The Vector P also carried a visible wavelength NTSC video imager. Both cameras were integrated into a dual-axis gimbal assembly that was mounted under the nose of the aircraft. The two cameras shared a single video downlink to the VistaNav ground station. The gimbal was also controlled from the ground station.

## Mission Planning, Real-Time Situational Awareness, and After-Action Reporting

VistaNav for UAS is a customizable ground-station framework that includes multi-window live video and synthetic vision situational awareness displays, as well as a low-cost inertial navigation system featuring an inertial navigation unit (INU-75GB) with a stabilization algorithm. VistaNav for UAS can support the full system life cycle, including mission planning and rehearsal, real-time situational awareness displays, and post-operations review. The real-time situational awareness displays are available for both the primary ground station and remote users.

During the USDA Forest Service/NASA UAV demonstration, both live video and synthetic vision displays were available in the ground station and on wireless tablet PCs, which demonstrated the remote-user VistaNav display capability.

For more information on VistaNav products and services, contact your Mercury sales representative or call 866-627-6951.

[www.mc.com](http://www.mc.com)



### About IntelliTech Microsystems, Inc.

IntelliTech Microsystems, Inc. is a leading developer and manufacturer of autonomous vehicle technologies for sea, air, and space applications. The company is a privately held business, located at 17001 Science Drive, Suite 119, Bowie, MD 20715.

For details on the Vector P and IntelliTech's other autonomous vehicle solutions, contact Steve Fujikawa, President, IntelliTech Microsystems, Inc. at 1-301-860-0825, [info@VectorP.com](mailto:info@VectorP.com), or visit [www.VectorP.com](http://www.VectorP.com).



### About Mercury Computer Systems, Inc.

Mercury Computer Systems, Inc. (NASDAQ: MRCY) is the leading provider of technology that captures, processes, and presents sensory information for real-time interpretation and critical decision making. The company leverages its unparalleled expertise in embedded computing hardware and software to enable the development of systems that continually advance the capabilities of defense, life sciences, geosciences, and other essential industry applications.

Based in Chelmsford, Massachusetts, Mercury serves a worldwide customer base through a large network of direct sales offices, subsidiaries, and distributors. Visit Mercury on the web at [www.mc.com](http://www.mc.com).

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