



## **KVH's CNS-5000 Provides Precise Navigation Solution for New Mobile Mapping Technology**

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**Churchill Navigation and Paravion Technology Turn to KVH's Inertial Navigation Technology to Support Airborne Augmented Reality System for Law Enforcement**

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For years, airborne law enforcement teams wrestled with synchronizing the images on their video screens with coordinates on paper maps as they directed the movements of ground units below them. Now a breakthrough advance in real-time video tracking technology is offering a better way. Called the Augmented Reality System (ARS), this dynamic real-time mapping system gives airborne law enforcement teams the ability to overlay street maps and other data on live video with a touch of a computer screen, making coordination with ground units more effective and efficient. However, for ARS to function aboard dynamic platforms like helicopters, ARS developers Churchill Navigation and Paravion Technology, Inc., required a precision position and navigation system immune to vibration and lightweight enough for airborne use. They found the solution in the CNS-5000 inertial navigation system from KVH Industries, Inc., (Nasdaq:KVHI). KVH's CNS-5000 provides the navigation and position data needed by the dynamic mapping software at the heart of the high-tech video system.

Tom Churchill, CEO of Churchill Navigation, said, "The KVH CNS-5000 met the demanding specifications of our airborne applications but was still a compact size. We considered many other IMUs for the ARS, but most were too large or too expensive for our applications. KVH's CNS-5000 stood out for its performance, physical size, and cost."

For its participation in development and willingness to test the system, the Denver Police Department's air support unit received one of the first fully functional versions of the system, which it uses every day. The DPD has also been instrumental in getting the system approved by various U.S. federal agencies and has taken prospective customers on flights to test the new technology. According to Churchill, numerous agencies have already written the ARS into their budgets while a handful of others are seriously considering this valuable new product. He notes that the comments from customers are positive, "Before ARS, airborne police units struggled to follow the action below while looking between two video screens, one with moving-map technology and one with a live image. For others, there was only the live image and a map book. Either way, it was an increased workload that affected the efficiency of the whole onboard crew. Now law enforcement agencies are shocked that they can watch a person on live video walk into a house and see the address displayed on their screen directly above the roof -- thanks to the KVH CNS-5000."

"The Augmented Reality System from Churchill and Paravion is a perfect application for KVH's CNS-5000, which offers precise position, velocity and attitude data and is ideal for 3D positioning; it also improves the accuracy of GPS," explains Jay Napoli, KVH's Vice President of FOG/OEM Sales. "The CNS-5000 is the result of the deep coupling of two proven navigation technologies -- KVH's fiber optic gyro-based inertial measurement unit with NovAtel's OEMV(R) GPS precision receiver -- within a single enclosure. This exciting live-mapping application showcases the tremendous potential of the CNS-5000 as an ideal inertial navigation solution for such applications as surveying, guidance operations, and autonomous vehicles used in security, precision agriculture, and inventory, as well as airport and seaport management."

KVH's fiber optic guidance and sensor systems are used in an array of commercial and defense-related stabilization, navigation, autonomous vehicle, and precision guidance applications. Visit [www.kvh.com/CNS5000](http://www.kvh.com/CNS5000) for detailed information about the CNS-5000 inertial navigation system, or [www.fiberopticgyro.com](http://www.fiberopticgyro.com) to learn more about KVH's full line of FOG products.

To learn more about this application, visit [www.kvh.com/whitepapers](http://www.kvh.com/whitepapers) to download the new case study, "Churchill Navigation Selects KVH's CNS-5000 for Real-time Mapping in Innovative Augmented Reality System (ARS)."

Note to Editors: High-resolution, press-ready images of the CNS-5000 INS are available at <http://press.kvh.com> for download and editorial use.

About KVH Industries, Inc.

KVH Industries is a leading manufacturer of high performance sensors and integrated inertial systems for defense and commercial guidance and stabilization applications. KVH is also a leading manufacturer of solutions that provide global high-speed Internet, television and voice services via satellite to mobile users at sea, on land, and in the air. The company is based in Middletown, RI, with facilities in Tinley Park, IL, Denmark, Norway, and Singapore.

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CONTACT: KVH Industries  
Chris Watson  
401-845-8138 ☐  
cwatson@kvh.com ☐