



Enabling Commercial UAS Success



Don't go it alone...



Currently providing engineering expertise for BNSF Railway's UAS initiatives and FAA Pathfinder Program. Let Bihrtle put its expertise to work for you.



- Computer vision application development
- Flight planning & notification software solutions
- High-fidelity UAS crew training simulation solutions
- Regulatory process technical direction
- Flight operations engineering & data analysis
- Flight vehicle design, analysis & prototype fabrication

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Computer Vision

A critical component of many promising applications using unmanned systems is the ability to process visual data and automatically identify features of interest. Bihrl Applied Research Inc. (BAR) provides customized software and hardware solutions for visual data processing tailored to the specific needs of each customer. BAR works with customers to identify the reference criteria against which visual data is compared and develops the custom algorithms required for feature detection as well as the analytical methods necessary to auto-generate meaningful information.



Flight Planning & Notification

BAR's NavPath software is a UAS-agnostic flight planning tool that combines advanced features with a flexible and intuitive user interface. NavPath provides the auto-generation of waypoints and geo-fences while allowing manual definitions and point-by-point editing capabilities. Additionally, NavPath provides the option for disconnected flight plan development, in the absence of an internet connection, for operation in remote locations. BAR also provides software tools that integrate with the Leidos UAS notification service to enable filing of UAS flight plans for approved UAS operating areas and auto-generation of all required operation and deconfliction notifications and NOTAMs.



Modeling & Simulation

Flight model fidelity is often overlooked in UAS training applications. Flight-representative models not only enhance crew training in normal flight, but also enable training for flight in adverse atmospheric conditions and degraded flight modes. Simulating real-world behaviors requires comprehensive modeling of the vehicle flight physics, vehicle sub-systems, sensor models and environmental effects, such as the complex flow-fields around structures and objects. BAR leverages over 40 years of flight dynamics experience to develop these physics-based models and provide customers with simulation solutions that deliver realistic and effective training.



Regulatory Assistance

Through BAR's first-hand experience with UAS development programs and its established relationships with industry, the FAA, U.S. Air Force, and U.S. Navy, BAR helps customers navigate the complex and evolving federal regulations surrounding the integration and operation of UAS in the National Airspace. BAR will provide insight into the types of concerns and issues that are raised during technical and safety review boards and offer the analytical services necessary to qualify your configuration. BAR has successfully assisted customers in a variety of areas, including airworthiness certification, obtaining Section 333 exemptions and flight test planning and execution.



Operations Support

Leveraging its long-standing experience in supporting a variety of manned and unmanned flight test programs, BAR provides customers with the operations support necessary to ensure the success of its UAS flight test program. Support areas include flight test program development, safety and risk assessments, UAS flight plan development, filing & approval, pre-flight checks, UAS crew coordination, and post-flight data processing & analysis.



Vehicle Development

Drawing upon its pioneering efforts in scale wind tunnel model construction, innovative UAS designs, and flight dynamics assessments of over 150 aircraft configurations, BAR provides customers with the experience necessary to ensure successful air vehicle program execution. Capabilities include the fabrication of advanced prototypes, development of flight control laws, and the evaluation of aircraft flight dynamics over the full operational envelope of the vehicle to determine its suitability for the mission.