Bihrle Applied Research Inc. Provides Aircraft Flight Dynamics Model for FAA Simulator

The Piper M350 flight simulator delivered by ZedaSoft Inc provides the FAA's Civil Aerospace Medical Institute (CAMI) with platform for civil human factors and flight safety research

Hampton, VA, August 10, 2020: Bihrle Applied Research Inc. (Bihrle) announced today that it developed and provisioned the flight dynamics model for a new Piper M350 flight simulator delivered to the FAA's Civil Aerospace Medical Institute (CAMI) by ZedaSoft Inc. The flight simulator is a Technically Advanced General Aviation Research Simulator, (TAGARS), which is designed for CAMI's research into civil human factors and flight safety.

ZedaSoft selected several industry esteemed companies for collaboration on this effort, producing a best-of-breed solution to meet the FAA's needs. Bihrle was selected based on its reputation for providing the aerospace community with flight-representative models that accurately simulate an aircraft's response across the full operational and extended flight envelopes of the aircraft. The Bihrle M350 flight model solution integrated into the TAGARS simulator features a full-envelope aerodynamic database, together with propulsion, fuel, flight controls, electrical, and land gear systems. The propulsion model realistically simulates temperatures, fuel flow, power and dynamics of the turbo-supercharged TSIO-550C motor from startup through high altitude performance. In order to validate the flight model, Bihrle conducted an instrumented flight test using its leased corporate Malibu aircraft (N4694Z). An objective evaluation was conducted using Bihrle's CompARE™ commercial software product to analyze and plot the simulated data against the flight test and engineering data. A piloted evaluation was also conducted to validate the simulated aircraft response and the resultant, pilot-validated flight model was deployed using Bihrle's commercial DSix Flight Simulation software as the flight model host software.

ZedaSoft integrated the Bihrle flight model and the other simulator components into a cohesive solution using its patented Container Based Architecture (CBA©) for Simulation framework, which serves as the runtime engine in the TAGARS simulator. Precision Flight Controls provided the cockpit, flight controls, and simulated Garmin G1000 hardware. With assistance from Garmin, ZedaSoft developed a G1000 software simulator and integrated it with the Precision Flight Controls G1000 hardware. For the 3D real time visual suite, ZedaSoft integrated MetaVR's Virtual Reality Scene Generator (VSRG) as part of the TAGARS' projector-dome configuration to provide the visual system for both the out-the-window and sensor views. The result is an industry-leading solution, providing an advanced platform for conducting the critical research activities required by the FAA.

"We are pleased to be part of the team that delivered this exciting solution to the FAA", said Jack Ralston, President, Bihrle Applied Research Inc. "We have a long history of working with ZedaSoft to deliver many successful projects and we look forward to future collaborative projects with them, MetaVR, and Precision Flight Controls to provide customers with advanced flight simulation solutions that exceed their expectations".

Image: Technically Advanced General Aviation Research Simulator (TAGARS) with inset photo of Malibu flight test aircraft (Background image courtesy of ZedaSoft).

About Bihrle Applied Research Inc.

Privately held Bihrle Applied Research Inc. (Bihrle) is an aeronautical research & development company specializing in the development of flight-representative software mathematical models for military & commercial fixed-wing and rotary-wing aircraft, including full-envelope modeling, malfunction modeling, and upset/recovery modeling. For more information about the company, visit www.bihrle.com.

About Zedasoft

ZedaSoft's mission is to provide high quality, flexible, repeatable, and innovative simulation solutions at a low cost. Our patented Container Based Architecture (CBA®) for simulation provides the framework for all our simulators and is the foundation of our simulation philosophy. We believe simulators should be extensible, flexible, and scalable without extensive modification of the core system. We seek to provide high quality training tools for warfighters and civil aviators alike, as well as simulation solutions for problems yet to be discovered. Our team, armed with the power of CBA, is ready to tackle any simulation challenge.

About MetaVR

MetaVR, founded in 1997, develops commercial PC-based software for the military simulation and training markets, featuring high-speed 3D visualization content and rapid creation of networked virtual worlds using real-world data. MetaVR's real-time visual systems provide the fidelity of geo-specific simulation with game-quality graphics. Users can build (with real-world photographic imagery, elevation data, and feature data) high-fidelity virtual worlds with our terrain generation tools, and render in real time, at 60Hz frame rates, the resulting virtual world with our real-time 3D visualization application, Virtual Reality Scene Generator. MetaVR systems are used for applications such as UAS/RPA trainers, manned flight simulators, mission planning and

rehearsal, joint fires and JTAC simulation training, urban operations training, and emergency response management training. For more information, visit www.metavr.com

About Precision Flight Controls

Established in 1990 Precision Flight Controls has been providing quality flight simulation solutions for over 30 years. We are recognized as a global leader in providing flight training organizations with affordable high-fidelity flight simulation systems, avionics, and accessories. Our Simulators represent dozens of general aviation and commercial aircraft as well as today's most popular technologically advanced aircraft, and G1000 trainers. Our product line at Precision Flight Controls meets the needs of both flight simulation enthusiasts as well as general aviation professionals.

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