

# Wyle and STK Reduce Planning Cycle for Airborne Network Test Events

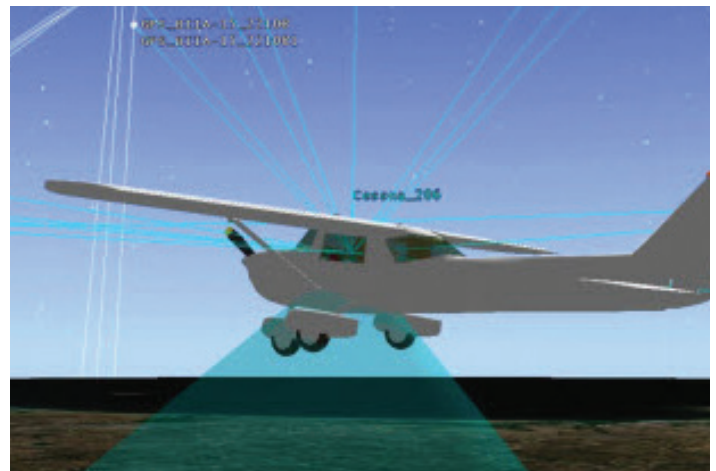
## Technology Overhead Helping Troops On the Ground

**RULES OF ENGAGEMENT:** As a prime U.S. government contractor, Wyle performs testing and evaluation of new airborne networks and ground systems for the U.S. Department of Defense (DoD) and the Electronic Systems Center (ESC)—the main acquisition arm of the U.S. Air Force. ESC's Airborne Networking Division develops programs to bring emerging capabilities and services—including aerial retrans, VoIP, full-motion Video, mesh networks, and mobile ad-hoc networks—to disadvantaged ground users. They currently use the DoD Technical Information Center's Reliability Information Analysis Center (RIAC) to thoroughly vet and test commercial-off-the-shelf (COTS) technologies and required a conceptual planning and analysis tool capable of meeting these highly critical needs.

**THE MISSION BRIEF:** Wyle uses AGI's Systems Tool Kit (STK) software as a conceptual planning tool in test events and analysis for both ESC and DoD. Used during the planning phase of nearly every test event, STK allows Wyle's engineers to predict link margin and antennae gain, optimize system performance, and enhance technical decision-making capabilities. Specifically, the use STK to evaluate route planning for both air and ground assets, optimal antenna configuration, terrain impact, GPS availability, and the comparison of predicted versus actual values. Zack Shaw—systems engineer and program manager for Wyle—states: "The hope is that some of the best COTS technology will find its way into a program of record to benefit disadvantaged users today."

"There is so much you can do just in modeling and simulation to cut down on the test cycle. It saves you time. It saves you money. It saves you effort."

— ZACK SHAW, WYLE



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Wyle is a leading provider of specialized engineering, professional, scientific, and technical services to the federal government. Their areas of expertise include systems and sustainment engineering, program and acquisition management, life science research, space medical operations, and information technology—as well as the testing and evaluation of aircraft, weapon systems, and networks.

**ONWARD TO VICTORY:** Wyle used STK to choose UAV routes that optimize performance and simulate real world scenarios, view the impact of terrain on ground users, repeat routes during live testing, and validate accuracy. They found it easy to input terrain elevation and determine when the optimal number of GPS satellites would be present for a live flight. Ultimately, STK's modeling and simulation helped reduce the test cycle—saving Wyle and its customers time, money, and effort. Future plans include the validation of additional models—which would result in high government efficiencies relative to cost, scheduling, and system performance.