



SENSIAC Success Story

SENSIAC Helps Transform a T-6 Trainer into a Light Attack Aircraft

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Customer:	United States (U.S.) Air Force and Air National Guard (ANG)
Challenge:	The U.S. Air Force required help converting an aircraft – used to train pilots into one – with Intelligence, Surveillance, Reconnaissance (ISR) and light attack capabilities. The new aircraft would provide a less expensive alternative to legacy warbirds like the A-10 or F-16 and could be used by foreign military allies as well as U.S. homeland security agencies.
Approach:	First, the Military Sensing Information Analysis Center (SENSIAC) created an ISR platform which included an Electro-Optical/Infra-Red (EO/IR) sensor that allowed the aircraft to track individuals and items on the ground as well as a downlink that allowed imaging from the EO/IR sensor to be relayed to ground operations, mission control, and other aircraft. Installing this advanced communications equipment required a great deal of antenna modeling and analysis. An integral piece of the project was to develop an aircraft self-protection system that enabled the plane to survive in operational theatre. In the ANG's assessment, the primary threat comes from manpads – shoulder-launched missiles fired from the ground. In response to this threat, SENSIAC engineers integrated a warning system that detects manpads, along with a dispenser system that fires flares to decoy the missiles. An electronic warfare management system ties the warning and dispenser systems together—and provides the pilot with easy control and display.

Value:	The SENSIAC flight tests proved the systems fully operational and ready for operational assessment by the ANG. In October of 2010, the ANG flew two successful missions with the AT-6B aircraft, followed by further operational assessment of the aircraft, and its mission systems, communication and other systems. This assessment again proved successful and included many positive comments from the pilots who flew the aircraft. Despite the large and complex workload undertaken, SENSIAC expertise in ISR and electronic warfare allowed a low-cost trainer aircraft to be converted to a light attack aircraft at a fraction of the cost of more expensive fighters like the A-10 and F-16.
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