



SENSIAC Success Story

Low-Cost Aerostat ISR to Support Mobile and Expeditionary Operations

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Customer:	US Army Rapid Equipping Force (REF)
Challenge:	SENSIAC's challenge was to help provide an Intelligence, Surveillance, and Reconnaissance (ISR) force protection capability at smaller Forward Operating Base (FOB) locations that cannot meet the logistic requirements of larger, and more costly, aerostat systems such as Persistent Ground Surveillance System (PGSS). By providing an expeditionary EO/IR sensor capability at significantly lower cost provides a critical opportunity to help protect warfighters at remote outposts on the battlefield during Operation Enduring Freedom.
Approach:	The result was the Small Tactical Multi-Payload Aerostat System (STMPAS) in which SENSIAC designed, tested, and evaluated the sensor system payload. The payload design requirements included low weight, low power, and the ability to withstand environmental extremes often experienced on the battlefield. The SENSIAC analysis included an evaluation of the various lightweight camera sensors that perform nighttime infrared, daylight visible, and basic target tracking at ranges of 2 to 5 kilometers. In some cases, SENSIAC provided side-by-side imagery data of multiple sensors to assist in the camera comparison and evaluation. Once the ideal sensors were identified, SENSIAC experts helped integrate the ISR platform into a tethered aerostat system with unique power and data link requirements. The STMPAS system is designed to be towed by a Mine Resistant Ambush Protected (MRAP) vehicle and can be launched and operated by a crew of 4 soldiers, both of which are important cost saving features.

Value:	<p>The STMPAS systems are currently being fielded in Afghanistan by the Army REF. Shortly after coming online for the first time, the system was successfully utilized to prevent a planned insurgent ambush near the deployed location. The system has drawn very positive reviews from the unit, who describe it as a major benefit that increases their force protection and operational abilities considerably. SENSIAC's expertise, selection and integration of sensor payloads, and evaluation of system performance was critical to the overall success of STMPAS as the system will provide new low-cost capabilities to the Warfighter in the areas of Intelligence, Surveillance, and Reconnaissance (ISR).</p>
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