USAF Scientific Advisory Board

Non-traditional ISR for Contested Environments (NICE)

Terms of Reference

Background

As part of recent operations in Iraq and Afghanistan, the Air Force has developed new ISR sensors and means of data exploitation and identified ISR challenges which need to be addressed. However, in the contested or denied environments which the USAF may encounter in the future, a different set of ISR capabilities may be needed and the challenges may be very different. This study will evaluate the feasibility and utility of using advanced sensors on existing and planned air vehicles capable of operating in a denied environment to provide ISR. It will also address the connectivity needed to provide this "non-traditional" ISR data to a variety of users.

Charter

This study will:

- Identify relevant sensors on current and planned aircraft and munitions capable of penetrating a contested or denied threat environment.
- Review the detailed technical parameters of those sensors and compare the quality and capabilities of those sensors in their operational environment to existing USAF and other service ISR sensors, including overhead sensors that continue to provide capability in contested environments.
- Provide examples of the utility of this non-traditional use of sensors for ISR relative to more traditional stand-off or non-survivable ISR sensors in terms of access to additional collection opportunities and the quality of the data collected.
- Describe mechanisms for using the identified non-traditional ISR sensors in the conventional PCPAD process. Mechanisms should include both near-term approaches which may rely heavily on manual processes and longer term approaches which may use more automated or autonomous methods. Tasking of the sensors, connectivity for communicating the data from the penetrating platform, and the process for analyzing and/or disseminating the data should be addressed.
- Identify technologies which would provide utility in realizing the identified approaches.
- Provide a proposed timeline for implementing the identified approaches, including a description of required system upgrades, the maturity level of the technology needed for those upgrades, and the feasibility of implementing those upgrades within a general time window.
- Outline TTPs for operationalizing the capabilities.

Study Products

Briefing to SAF/OS & AF/CC in July 2012. Publish report in December 2012.