Research Brief

RAND PROJECT AIR FORCE

New Approaches to Planning, Executing, and Assessing Intelligence, Surveillance, and Reconnaissance Operations

RAND RESEARCH AREAS
THE ARTS
CHILD POLICY
CIVIL JUSTICE
EDUCATION
ENERGY AND ENVIRONMENT
HEALTH AND HEALTH CARE
INTERNATIONAL AFFAIRS
NATIONAL SECURITY
POPULATION AND AGING
PUBLIC SAFETY
SCIENCE AND TECHNOLOGY
SUBSTANCE ABUSE
TERRORISM AND HOMELAND SECURITY
TRANSPORTATION AND INFRASTRUCTURE
WORKFORCE AND WORKPLACE

The U.S. Air Force today encounters fleeting targets, such as terrorists and insurgents, which expose themselves to detection and attack for short periods of time, in addition to traditional fixed targets. Rapid response requires an intelligence, surveillance, and reconnaissance (ISR) system that has appropriate sensors at the correct location when targets are exposed. The ISR planning process must prioritize many competing tasks and allow flexible, real-time changes to plans with minimum delay and friction.

Allocating limited ISR resources is a challenge. Intelligence officers do not have the means to rapidly analyze the costs and benefits of an ISR collection strategy, especially when changes are needed. Moreover, lessons learned from operations in Afghanistan and Iraq indicate that commanders are often unaware of how ISR assets are being employed and that resources are perhaps not being used to their full potential.

RAND Project AIR FORCE (PAF), a unit of the RAND Corporation, has performed research to improve the planning, execution, and assessment of ISR assets. This work has resulted in three suggested approaches:

Improving ISR Collection Planning and Execution

The Air Force can enhance planning for daily intelligence collections by adopting a strategies-to-tasks and utility-based framework. This framework would link the top-level commander's guidance, operational objectives, and tasks to specific collections and would differentiate between collections based on their utility (i.e., importance in achieving the objectives). Intelligence officers would be able to deal with time-sensitive, emerging targets by rapidly comparing the value of an ad hoc collection with the value of the collection opportunities already planned.

Analyzing the Costs and Benefits of ISR Collection Strategies

Traditional methods of ISR modeling assume fixed targets and predictable operations. Such approaches are no longer sufficient to test collection strategies against today's time-sensitive targets. PAF developed a suite of models to analyze the process of building collection "decks" (i.e., planned collections) and their execution in a simulated environment that reflects today's dynamic environment. The flexibility of the models is demonstrated by examining the effects of employing different collection strategies, in addition to sensors and platforms, in the same scenario.

Improving the ISR Assessment Process

To ensure efficient use of limited intelligence assets, an end-to-end assessment process is needed to monitor and evaluate daily operations. To date, the majority of ISR assessments have focused on statistics from the tactical level (e.g., percentage of planned images collected), but these data do not indicate how well the ISR system satisfied the commander's objectives. Adopting a strategies-to-tasks framework for collection planning at the Joint Task Force (JTF) level will enable more useful assessments because ISR tasks at the tactical level will be clearly connected to campaign objectives. JTF and component commanders should mandate feedback on ISR performance from all requestors and users of ISR-generated intelligence, and doctrine and manuals should be updated accordingly.

These methodologies should help the Air Force ensure the best use of limited intelligence assets. The ability to model ISR employment in today's dynamic environment provides a useful tool to study future Air Force challenges. ■

This product is part of the RAND Corporation research brief series. RAND research briefs present policy-oriented summaries of published, peer-reviewed documents.

Corporate Headquarters
1776 Main Street
P.O. Box 2138
Santa Monica, California
90407-2138
TEL 310.393.0411
FAX 310.393.4818

This research brief describes work done for RAND Project AIR FORCE and documented in *Methodology for Improving the Planning, Execution, and Assessment of Intelligence, Surveillance, and Reconnaissance Operations*, by Sherrill Lingel, Carl Rhodes, Amado Cordova, Jeff Hagen, Joel Kvitky, and Lance Menthe, TR-459-AF (available at http://www.rand.org/pubs/technical_reports/TR459/), 2008, 116 pp., ISBN: 978-0-8330-4171-5.

RAND Offices
Santa Monica, CA • Washington, DC • Pittsburgh, PA • Jackson, MS / New Orleans, LA • Cambridge, UK • Doha, QA

RB-242-AF (2008)