



Advanced Mission Planning System (AMPS)

September 2018



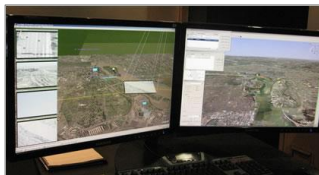
Agenda

- Tradecraft Technologies
- BLUF
- The Challenge
- The Impact
- The Opportunity
- Key Features & Benefits
- Installation & Deployment
- Future Opportunities
- Questions/Contact

Tradecraft Technologies



- Boston headquarters with offices in Springfield, VA
- TS-SCI Clearances
- Experienced Leadership Team
- Unique Approach: Commercial-style investment in product-based solutions, top-tier talent and pace applied to Government requirements. Truly *better, faster, cheaper*.
- Successful history w/ this approach – 350+ C2 systems fielded to CENTCOM AO...





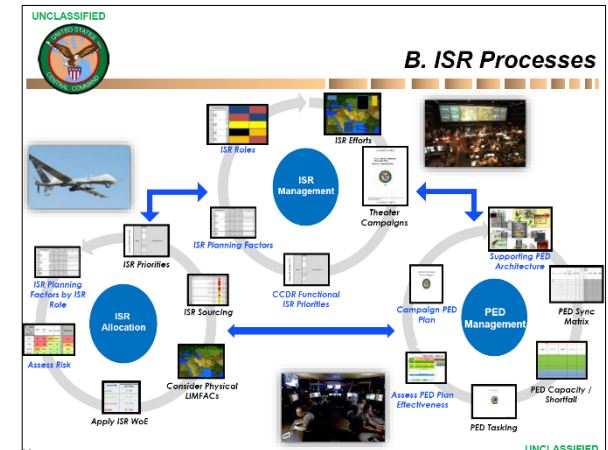
BLUF

- \$5 Billion+ in world-class A-ISR assets & personnel are being managed using Microsoft Office and email.



ISR SYNCH MATRIX			
ROUTES AND ON STATION			
AIR ASSET	THREAT	AIR ASSET	THREAT
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- Limited shared awareness of past, current or future ops/intel collection is significantly impacting mission efficiency and effectiveness.
- Leadership in the A-ISR community have repeatedly stated, and list as a priority, the need to address this issue.
- Tradecraft's Advanced Mission Planning System (AMPS) foundation can deliver a solution to this problem quickly and cost effectively.
 - Tradecraft developed AMPS with the DoD/Joint A-ISR mission and challenges specifically in mind.
 - Considerable time and money has been invested to better understand the problem, capture detailed requirements and design and develop this foundational capability.



We plan to save the DoD over 1,000 hours/day (180 Personnel/\$25M), improve ISR efficiency by an estimated \$500M+ annually, improved Mission Command, improve operations. Our Servicemen and women deserve the best tools & information to fight and win!



The Challenge

The Department of Defense lacks an Enterprise-wide capability to share a common understanding of their A-ISR domain leaving high-value assets & personnel under-utilized and strategic and tactical opportunities unrealized...

- Complex, global, joint operations
- Spanning many units and organizations: 6 Geographic Combatant Commands, Joint Task Forces, Military Services, National Guard, NGA, NSA, DIA, Coalition
- Globally, over 200 aerial ISR sorties per day, ~250 PED teams per day = 2,500+ Servicemen and Women
- No common, standards-based repository
- Limited visibility / accountability of daily operations
- Limited visibility / accountability of daily intelligence reports
- Multinational language barriers hinder closer collaboration
- The problem will get worse

“Focus first on where the ISR rubber hits the C2 road!”

“We need help being more agile. Our ISR Enterprise is only as agile as its least flexible element. That includes Enterprise-wide policy, processes, visualization, applications, tools, and data repositories.”

- Air Commodore Steve Thornber, 5th Annual Automation ISR Symposium

“We lack a common software capability to track and manage OCONUS operations, forward deployed sites, and federated Processing, Exploitation and Dissemination (PED) Team supporting multiple Areas of Operation.”

- COL Adam Hinsdale, Commander of INSCOM's 116th MIB (Ret.)



The Impact

Given the cost of the assets and personnel alone, the lack of modern tools is estimated to cost **\$500M+ annually**, result in 25% negative EEI collection, lost opportunity and greater risk...

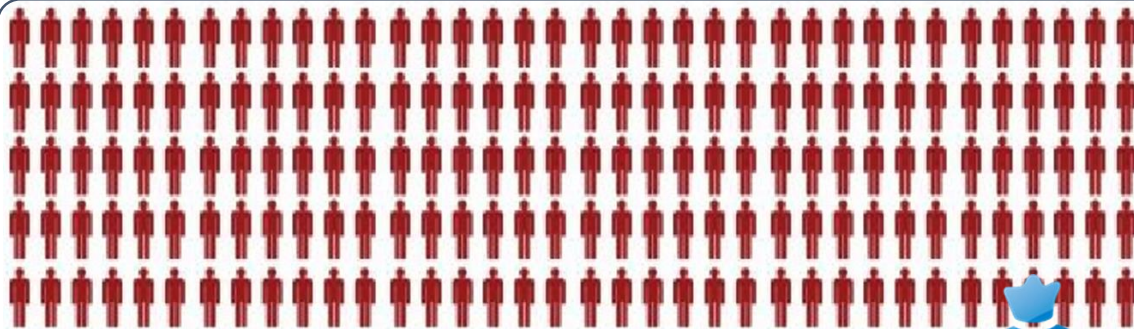


Just a 10% inefficiency in A-ISR asset allocation
results in an over ***\$500M+ annual loss in A-ISR platform utility***

10-20% cancelations due to
weather/maintenance



500+ idle Servicemembers



1,000 hours a day or **180 man-years spent annually**
copying/pasting data for the ATO/RSTA



US, Coalition & Indigenous Forces



@ Greater Risk



20-30% Negative EEI's collects on an already
inefficiently tasked enterprise...

Requests Denied



Poor Asset Management



The Opportunity

To deliver the most advanced A-ISR capability in the world in order to defeat the enemy, protect and support our friends and return home to their families.

A new solution would provide...

- Significant time and cost savings with improved morale for high-value A-ISR personnel
- Real-time, global awareness of all platforms, payload and personnel
- Ability to identify and prevent unnecessary or duplicative collection requirements
- Ability to identify synergies in planning or ad-hoc re-tasking across the enterprise
- Enhanced capacity, quality and timeliness of global intelligence collection and strike capability
- Multi-lingual ability to facilitate and encourage cross-coalition collaboration

A solution that always has the answer...

- What missions, aircraft, teams have flown?
- What has been collected?
- What is flying now and where?
- What aircraft and team is available to fly and when?
- What aircraft and team will be flying when and where?
- What will be collected on those missions?
- Is this EEI duplicative with what has been collected or planned to be?
- What mission requirements have/have not been satisfied?
- What is my units current readiness level?
- What coalition operations are or will be active in my AO?



Key Features & Benefits

- **Intuitive Interface** - Designed by professional UI/UX Team – learn, train and master in a single day.
- **Role-based Workflow** – intuitive, role-driven access to the right info, right tools at the right time
- **Automation** – Point & Click requests, pre-populated forms, dropdown menus of available resources
- **Multi-Lingual** – Toggle between languages for seamless collaboration during coalition and foreign nation exercises and engagements.
- **Joint & Coalition** – Grant access to Coalition and Foreign Nation partners to closely collaborate on air-space management, planning, missions and training exercises.
- **Common Data Standard** – Single location for ISR operations & intelligence...sync with current data stores when available
- **Open and Accessible** - Robust, fully-documented APIs/datastores

Installation & Deployment Flexibility



Server-side Installation

- Windows 2016 Server
- IIS , Microsoft SQL Enterprise
- GeoServer with GeoWebCache
- PostGIS - Spatial Database
- Cesium Open Source Globe
- Wowza Video Streaming
- Enterprise building blocks 2U
- 16+ Cores, 1 - 24TB Disk Space, 128+ Gig RAM



Client Requirements

- Desktop/Laptop
- 4 Gig Ram
- GPU Capability
- Web Browser





Future Opportunities

Artificial Intelligence Integration (MAVEN, TensorFlow, others)

3-Dimensional Intelligence

Ground and Maritime ISR

- ISR Collection plans and integration between the air, ground, and maritime domains with available ISR resources and PED Teams

Expanded Staff Functionality

- J1/S1/G1 functions – Joint Manning Documents and MTOEs, personnel accountability
- J4/S4/G4 functions – Maintenance schedules, logistics to support ISR, equipment accountability
- J6/S6/G6 functions – Maintenance and outage schedules and plans
- J8 functions – Fund accountability

Advanced Modelling / Individual and Team Training

- Collection Modelling of air, ground, and maritime operations
- Comparison of various ISR operations
- Individual (Collection Management, Analyst, ITC, Battle Captain, PED Analyst) and Team – PED and Joint Task Force Training modules
- Model future, advanced ISR systems

Questions / Contact

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Sources ¹

Program Acquisition Cost by Weapons System

United States Department of Defense

Fiscal Year 2017 Budget Request – Issued February 2016

http://comptroller.defense.gov/Portals/45/documents/defbudget/FY2017/FY2017_Weapons.pdf

*“Overall, the fiscal year 2014 budget requests **\$4.1 billion** for all unmanned systems, citing \$3.7 billion for unmanned air systems, \$13 million for ground systems and \$330 million for maritime systems, respectively.” – Pentagon Plans for Cut to Drone Budget, DoD Buzz, January 2, 2014*

“There are currently 7,362 Ravens, 990 WASPs, 1,137 Pumas and 306 T-Hawks – all small UAS. By contrast there are only 246 Predators and Gray Eagles, 126 Reapers, 491 Shadows and 33 Global Hawks – to cite a few from the larger categories”

*“The unit cost of the Army's MQ-1C Gray Eagle is \$6.66 million in FY 2016 **[\$1.6B]**, while the MQ-9 Reaper costs \$14.75 million **[\$1.8B]**. These prices are for air vehicles only and does not include the cost of ground stations and other associated equipment.” - U.S. Defense Budget Forecast – Fiscal Year 2017, Forecast International*

*“Because of Air Force-initiated upgrades a \$10 million per copy Global Hawk platform has become at least a \$30-40 million aircraft, and the cost will increase substantially further as additional and improved sensors, and corresponding power/payload upgrades, are added. In fact, the Air Force projects the average total unit cost (including all program costs) will exceed \$75 million per copy **[\$3.8 Billion]**” - CRS Report for Congress ISR Program Issues for Congress, February 22, 2005*