

## **480 ISR Wing Innovation Efforts**

*We have a lot of talented Airmen who possess the curiosity and tenacity to seek and develop solutions for problems that frustrate them.*

### **SENTINEL SIM**

Sentinel Sim will empower the DCGS with an immersive, collaborative environment that trains intelligence analysts to “Discover the Unknown.” This project will leverage the Virtual Battlespace 3 (VBS3) software suite to simulate the employment of ISR assets. The underlying technology leverages advances from the commercial video game industry to provide an unprecedented level of realism and versatility. VBS3 may be used to simulate all the functions performed on the operations floor of a Distributed Ground Site, or Air Operations Center. Training Managers will leverage VBS3’s capabilities for Initial Qualification Training (IQT) and Mission Qualification Training (MQT), while Standardization and Evaluation shops will use VBS3 to administer evaluations. Tacticians may utilize the scenario building features of VBS3 to demonstrate the employment of ISR capabilities and refine Tactics, Techniques and Procedures (TTPs). In doing so, they will be answering the call of the 2018 National Defense Strategy to evolve innovative operational concepts, and to anticipate how competitors and adversaries will attempt to defeat the U.S.

Throughout the rapid prototyping process, the Sentinel Sim project team will develop a cadre of Airmen who are skilled in the practice of simulation-based training in VBS3. Their efforts will enable dynamic training, enhancing the critical thinking skills of intelligence analysts who must grapple with unpredictability. Additionally, the diversity of training scenarios allows ISR units to perform Rehearsal of Concept (ROC) drills across the spectrum of combat. The 480th ISR Wing procured VBS3 licenses using Squadron Innovation Funds (SIFs).

### **PROVOKED SLOTH**

PROVOKEDSLOTH automates portions of the remediation process for Classified Message Incidents (CMI). PROVOKEDSLOTH is a simple PowerShell script that scans for keywords on whole computer drives and deletes the line that the keyword is found on. This preserves the chat log for mission use and rapidly completes an important phase of the CMI remediation process. If the log is moved, PROVOKEDSLOTH will still find it because it scans the whole computer. With admin rights and a list of users, PROVOKEDSLOTH can scan the entire local network. PROVOKEDSLOTH can complete the most urgent steps of the remediation process within 15 minutes. For a chat room of 10 users, PROVOKEDSLOTH has the potential to decrease remediation time from 20-30 hours to 2.5 hours—preventing mission degradation or cancellation due to a lack of computing resources. In addition, this program could even be used for proactive network hygiene by periodically scanning for classified spillage. PROVOKEDSLOTH took a few hours to develop and deploy. The development team coordinated with the cyber security team and local leaders to accept the risks of running a script. These leaders made the decision that in an emergency as an exception to policy this script may be executed.

### **UNICORN CM (PREVIOUSLY KNOWN AS NARWHAL):**

Air Force program of record for standards, evaluation, training and scheduling of Air Force Distributed Common Ground System (DCGS) mission crew manning was not accredited on NSA systems. This created a significant disconnect for an already complex mission amongst Distributed Mission Sites (DMS) regarding standards, evaluation, training, and scheduling workflow functionality in an alternative program. Each site created unique Mission Planning Sheets (MPS) independent from all other sites participating in the mission resulting in multiple DMS-specific MPSs for a single mission making it difficult for execution C2. Leveraging the Pivotal rapid development process and environment, the 480 ISRW expedited

development and initial fielding of UNICORN CM (previously referred to as NARWHAL) for a collaborative, web-based, structured interface for distributed scheduling. UNICORN CM is designed to be a single DCGS end-to-end system that increases mission readiness, improves staff utilization, increased leadership visibility for mission assembly and decisive deployment for global ISR mission support.

The UNICORN CM scheduling application was the apparatus for Airmen Cory, Jason and Brad from the 480th ISR Wing to develop their skills on while TDY to Pivotal Labs to learn rapid software development processes. During the development phase, the app was hosted on NGA's instance of Pivotal Cloud Foundry. The team was able to progress from their initial idea to deploying their minimal viable product, including the accreditation process to running in production for real users, in less than 90 days!

Update: The 480th Wing has partnered with Leidos to accomplish the final development items required for full integration across all of the globally distributed sites within the wing. UNICORN CM is estimated to be fully operational by fall 2019.

### **FLISR**

FLISR was designed to streamline the collection of intelligence by non-traditional ISR (NT-ISR) platforms. This Secret Internet Protocol Router Network application parses ATO data to determine where strike aircraft tasked with close air support missions are scheduled to fly, then visualizes the data in a geospatial display. The app queries aircraft locational data against a CAOC targeting database to select the most-appropriate aircraft for collection based on sensor type and location. Once an aircraft has been selected, the app generates an automated message to the CAOC requesting collection in a standard format. This process ensures each sortie is executed as efficiently as possible and increases our situational awareness of the battlefield.

The application will be used by Mission Operations Commanders serving at Distributed Ground Stations – the Air Force's primary intelligence processing, exploitation, and dissemination sites – to request collection in areas that do not have ISR assets. The tool can also be used by intelligence professionals at a CAOC to maintain situational awareness of strike aircraft and identify opportunities for dynamic collection.

Users will gain increased situational awareness of collection opportunities and the ability to request NT-ISR assets to collect imagery intelligence. The application automates collection of this information from disparate sites, which can take upwards of 30 minutes per analyst. The app provides flexibility during situations in which fighters will be on-station long before ISR assets can be re-tasked and arrive on station.

Update: AFRL has assumed responsibility for further development and integration of FLISR.

### **STARS:**

STARS began as an application originally names "STONEWALL", which addressed the issue of Airmen having to repetitively cut and paste each field of information into an intelligence report. This took up the majority of the analyst's time instead of supporting operational mission. The information was machine-formatted and came out the same way every time. The Airmen took the initiative to self-learn coding of software and write a program that takes the machine-formatted information and moves it into the correct data field on the report. It even pulls up the report needed by the analyst next to the machine-formatted text. This allows the analyst to verify the information and forward it to the end user. The recouped time allows ISR Airmen to focus on analysis vice data migration.

Update: The Airmen involved in the creation of STARS met with AFRL to discuss user needs, and AFRL is working on a Minimum Viable Product (MVP) to present to the team for further development.

#### **AIRMEN DEVELOPED FIRST RESPONDER SUPPORT:**

Staff Sergeant Matthew Begeman, 480 ISRW Weapons and Tactics, was inspired when his innovative idea was retweeted by the Chief of Staff of the Air Force. Begeman while in training on the Aeronautical Reconnaissance Coverage Geographic Information System (ArcGIS) during the time Hurricane Irma was bearing down on the US Virgin Islands, Puerto Rico and the US mainland had the innovative idea to utilize ArcGIS to create a program to track Hurricane Irma on his own time. The application collected data from various websites which showed real-time updates via a common operating picture of the hurricane. This homegrown tool was distributed in support of FEMA, AFCAT, NGB, National Weather Service, and the Army Corp of Engineers in supporting disaster relief efforts. Users could share photos, which enabled emergency responders to see situations prior to arriving on the scene and use the information to create alternate evacuation points.

#### **iRIS**

iRIS is a consolidated personnel system that integrates stove-piped personnel data systems (i.e. MILPDS, BLSDM, AFFMS, etc.). This tool streamlines the FSS/CSS processes and makes staff meetings faster and more efficient. At this time, the information has to be pulled from the individual websites; however, in the future the desired end state is that information will be pushed from the sites. iRIS does not grant system access to the AF systems themselves, only database access for read-only functions which protects Airmen's information from accidental tampering. The Airmen team has piloted iRIS at 7 units and the MPF across Osan with great success. The team is continuing to prototype and determine what software applications will be most effective for large-scale integration and sustainment.