



INSIDE ACTIVITY BASED INTELLIGENCE

EMPOWERING CRUCIAL INTELLIGENCE INSIGHTS



No mission is more critical than ensuring our national security and the safety of our warfighters. That's why BAE Systems Intelligence Analysts and Engineers developed Activity Based Intelligence (ABI). See how our innovative ABI solution and expertise is changing how the Intelligence Community is reviewing, processing and analyzing critical intelligence data.

Clear, actionable intelligence is vital to the planning and execution of any military, peacekeeping or disaster-relief operation. The success of these missions is largely dependent upon timely intelligence, fused from multiple data sources. However, the dynamic proliferation of new intelligence sources such as ground, airborne and space-based electro-optical, infrared and hyper-spectral sensors, has made it impossible to track and identify important activities solely through human analytical processes. There is simply too much big data being collected for human analysts to sort through it all – especially when time is of the essence.

A new computer-assisted problem solving methodology, known as ABI, has emerged to improve the efficiency and timeliness of intelligence analysis to better understand and take action upon historical, current and anticipated activities involving national or global security.

“I don't want our analysts to spend time searching for information,” said National Geospatial-Intelligence Director, Letitia Long in a July 2013 interview with *WashingtonExec*. “I want to take advantage of computers and technology to serve up the information that we need to be focused on.”

The ABI intelligence tradecraft organizes and collates large volumes of collected data, to make it easier for analysts to identify potential adversaries and their targets, by distinguishing relevant patterns and recognize suspicious behaviors before a possible threat may be imminent.

Throughout September and October, we will be profiling some of the many engineering and intelligence analysis experts behind our ABI solution to explain how this innovative methodology is impacting intelligence analysis and developing a “new breed” of analyst.



SPOTLIGHT ON: **DONALD WIDENER** PROGRAM MANAGER

From your perspective, what is Activity Based Intelligence?

In short, ABI is the “Rosetta Stone” for the hundreds of thousands of datasets represented in the big data problem. For engineers, ABI is the framework or stovepipe for the multi-INT stovepipes of data that exist today. For intelligence analysts, ABI provides a methodology for raw, multi-INT data analysis and multi-INT sensor collection management.

How did you get involved in ABI?

I first heard of ABI while supporting an Intelligence Community customer on a counterterrorism project. At the time Gordon Ainsworth, whom many call the “Godfather of ABI,” was our Technical Executive. He released the first ABI white papers outlining the principles of ABI.

In 2008, I deployed to Iraq on a contract and discovered how important this analytic methodology could be for the warfighter. When I redeployed and returned to work for BAE Systems, I started managing a project with data collection technology that was a perfect match for ABI.

Later in 2009, BAE Systems’ wide area motion imagery sensor, ARGUS, was nearing deployment and I was requested to provide subject matter expertise analysis. The current exploitation system was not fully developed, so I worked with geospatial imagery and ISR engineers across our company to develop the first ABI software release.

Fast forward to today, I manage a team of ABI analysts that are embedded within multiple customer locations and provide ABI training and knowledge management for government and military analysts. Additionally, I host a monthly ABI Working Group which draws experts from across our company to discuss customer challenges and analytic best practices.



SPOTLIGHT ON: **DONALD WIDENER** PROGRAM MANAGER (CONTINUED)

What spurred the need for ABI?

ABI is revolutionary in the way it characterizes big data and makes untapped data, or “dark” data, usable.

Looking back in my career, I have seen several evolutionary changes:

- In the early nineties when new sensors were providing us with so much more information, we had to digitize our workflow. New software programs were created emulating the hardware versions. For example, as an imagery analyst, I went from exploiting hardcopy film on a light table with a microscope to reviewing digital copies of the imagery using new software.
- At the same time, new software diagramming hierarchies of organizations began being adopted by the Intel Community, but these digital tools could only improve the speed of analysis so much.
- Fast forward to the 2000s, the need for critical intelligence in support of counterterrorism operations caused an explosion in quick-reaction capabilities (QRC) in Intelligence Surveillance, and Reconnaissance (ISR) delivered to the warfighter in the form of new sensors, systems, and software. The critical demand for geospatial intelligence in the tactical forward operating environment and the rush to fulfill that critical need led to an accelerated acquisition cycle for these QRCs and a mounting problem of managing and analyzing the large datasets they produce.

The existing architecture became less agile and the US Government pushed for Open Technology Development (OTD) demanding access to content and capabilities in ways that the existing architecture could not efficiently deliver. ABI became the system architecture’s solution and software development is following the “app store” model.



SPOTLIGHT ON: **NICHOLAS WILLIAMS** SYSTEMS ENGINEER

Activity Based Intelligence has been defined and sponsored by the U.S. Office of the Director for National Intelligence and has been embraced by the major U.S. intelligence agencies.

Next week, our experts will share their views on the major advantages ABI offers. We will also explore how ABI can be applied to a broad range of problems outside the Intelligence Community.

From your perspective, what is Activity Based Intelligence?

ABI enables critical thinking for analysts- it's a philosophy, and a guiding principle for engineering tools to support analysts. This isn't new, as analysts have always been employed to examine evidence and make assessments based on the data, but what's different now is that analysts have the ability to view, query, and reason in their own language at the activity level, and within timelines never before imaginable. They can ask questions like "Who or what was involved in this event" and view results in intuitive user interfaces, rather than spend their time searching for, and combining information from, data within multiple databases using crazy search parameters. A lot of the technologies that have revolutionized the commercial software world – distributed computing, web based applications, a focus on user experience and ever-increasing performance- are benefiting analysts through ABI.

How did you get involved in ABI?

I got involved in ABI with the help of some luck and great timing. I had just graduated college with engineering and economics degrees and was excited to work in an undefined and rapidly evolving problem space that was just starting to gain traction with viable solutions.

What spurred the need for ABI?

ABI was developed to help intelligence professionals do their jobs faster and better. ABI represents a natural progression of technology finally catching up to the way analysts have always been doing their job. Crucial intelligence insights come up at the whiteboard, where analysts collaboratively map out the adversary network, building up evidence on each of the participants and understand their relationships. Initially this was done with pen and paper, or pushpins and yarn. As databases developed it became easier to store the data electronically but not necessarily analyze it. Now we're approaching a paradigm where software can assist the analysts at all the way through a host of tasks—storage, processing, visualization, analysis, and finally reasoning and understanding.