

EXECUTIVE SUMMARY OF AUTOMATIC IDENTIFICATION AND DATA CAPTURE (AIDC)

Automatic Identification and Data Capture (AIDC) technologies, also called **Automatic Identification Technologies (AIT)** are all around us. Our modern economy wouldn't function as well as it does without it. Retail stores everywhere rely on AIDC so that even children understand the ability to glean data from the barcode on toy packaging. In fact, UPC barcodes have been made into toys and games. Nearly everyone at one time or another has used AIDC while trying to speed their grocery store exit through the self-checkout line or stood and watched as a cashier has scanned item after item placed in front of them.

AIDC technologies include a wide range of solutions, each with different data capacities, form factors, capabilities, and "best practice" uses. While everyone is familiar with the UPC barcode, there are other forms of AIDC which are routinely used but the users may not fully appreciate the functionality of the technology. The common vehicle EZPass is a great example. EZPass is a form of AIDC, in this case radio frequency identification (RFID), that automatically collects and moves data. Barcodes, RFID, contact memory buttons and many other forms of AIDC all serve to address specific data collection and data use needs. AIDC technologies also include mobile computing devices that facilitate the collection, manipulation, or communication of data from barcodes and RFID tags as well as through operator entry of data via voice commands.

Each member of the AIDC technology family has its own specific benefits and limitations—meaning there is no "best" technology. Rather, applications may and often are, best served by one or more AIDC technologies used in combination to provide enterprise-wide solutions to business challenges. Most AIDC technologies are defined by international and national technical standards. International, national or industry application standards also exist to define the use of AIDC technologies.

In the Department of Defense (DoD), a diverse family of technologies share the common purpose of identifying, tracking, recording, storing and communicating essential business, personal, or product data. In most cases, AIDC technologies serve as the front end of enterprise software systems, providing fast and accurate collection and entry of data. This is typically where most users find the immediate return on their investment in the technology. Over time, users have come to understand that often an even bigger return on investment can be gained by leveraging the precisely collected data to make more timely, informed, and reliable decisions.

AIDC TECHNOLOGIES ARE THE FIRST LAYER IN THE INTERNET OF THINGS (IOT)

The Internet of Things (IoT) is the network of physical objects that contain embedded or attached technology to sense or interact with their internal states or the external environment and communicate information about that phenomena electronically.

AIDC enables the machine-to-machine communication needed for the IoT. Sensors attached to or embedded in "things" can serve as the identifier and detect activity or environmental conditions, such as motion, temperature, humidity, erosion, etc. and pass the data about that activity or condition to other nodes within the IoT to drive action. The interconnectivity of autonomous, accurate data accelerates the speed of decisions and increase confidence in those decisions.

BROAD IMPACT TO EVERY FEDERAL AGENCY AND THE AMERICAN TAXPAYER

“Research shows that 40% of the anticipated value of all business initiatives is never achieved. Poor data quality in both the planning and execution phases of these initiatives is a primary cause. Poor data quality also effects operational efficiency, risk mitigation and agility by compromising the decisions made in each of these areas.” – *Gartner Study, “Measuring the Business Value of Data Quality,” October 10, 2011*



Within the Department of Defense (DOD), current data capture processes for acquisition, receiving, movement, repair, inventory, etc. of high-value and critical assets are manual. Each of those life cycle steps is almost always accomplished by filling out a form and then using a keyboard to transcribe the information from the form into a data system. Add to that the manual process a lack of data quality controls on most current systems that allow free-form data entry, resulting in unreliable data. What we get is the aggregation of questionable data which leads to billion-dollar decisions being made based on a “guess.”

The lack of quality data is the primary driver behind the DoD’s distinction as the only Federal agency unable to pass an audit and the impetus behind the need for the Financial Improvement and Audit Readiness (FIAR) initiatives being driven by the Congress and General Accounting Office (GAO).

In 1990 the Chief Financial Officer’s (CFO) Act was passed, requiring all Federal agencies to issue a clean audit. DoD then found it needed a way to identify tangible assets individually and associate value with those items so that it could eventually be issued a clean audit opinion. The Item Unique Identification (IUID) policy, released in 2003, required IUID language be included in all solicitations for new items as of 1 January 2004. The IUID policy requires the placement of a barcode (2D Data Matrix) on every item DoD acquires that meets certain criteria. A subsequent policy release established the requirement for items already in the DoD inventory (known as “legacy items”) and for property in the possession of contractors. A 2010 DoD Logistics IUID Task Force report found that IUID can be cost-effectively integrated into DoD logistics processes and provide substantial benefits—approximately \$3-5 billion in annual benefits for an estimated \$44–66 billion in savings over the next 20 years. Moreover, by facilitating asset tracking, IUID supports the achievement of a clean DoD audit.

RISK TO OPERATIONAL READINESS, SAFETY, AND THE NATIONAL ECONOMY

Defense budgets are increasingly stretched to support on-going operational demands with a reduced workforce, aging equipment, and antiquated IT systems. The defense budget is finite and efficiency must be found to support the much-needed investments in people, equipment, and technology.

AIDC technologies, when combined with the automated information systems to support the data collected from them, will reduce the manpower required to perform essential functions and improve life cycle data about the critical assets the DoD buys and maintains.



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Matters

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HOW AIM AND THE AIT ALLIANCE CAN HELP

The AIT Alliance is a group of Automatic Identification Technology (AIT) suppliers and manufacturers dedicated to raising awareness about AIT and encouraging the adoption of AIT policies within U.S. government agencies and the U.S. government contractor community. Our members may be competitors in the marketplace, but each of our members is a patriot and American taxpayer, dedicated to helping the U.S. government and DoD improve the way they do business by adopting AIT.

AIM North America serves as conduit to bring industry and government together to foster the exchange of information. This exchange provides clarity on the implementation of technology to achieve business process improvement goals.

We welcome the opportunity to provide independent advice on policy, technology, and implementation of standards through hands-on demonstrations, seminars, webinars, whitepapers, and case studies.

The AIM-NA AIT Alliance can be found at: <http://aitalliance.org/>