

ICBS-R
Automated Identification Technology (AIT) Evaluation
8/26/2004
DRAFT

Project Sponsorship:

The ICBS Re-engineering Project (ICBS-R) is chartered by the National Wildfire Coordinating Group (NWCG) as a partnership between the USFS, BLM and the National Interagency Support Cache (NISC) Managers.

Business Requirements Validation:

During the current project phase, National and Local Area Cache requirements are being developed, validated and updated. This work will result in a set of concise documents describing cache business requirements. The project will competitively select a vendor to produce a design for the next generation ICBS. The business requirements documentation will provide the foundation for that design work. Once an approved design is finalized, a contract will be competitively awarded to contractor to actually build the re-engineered system. This will be a lengthy and “iterative” process, with input from cache subject matter experts (SMEs) involved throughout the process.

One aspect of cache business requirements is Automated Identification Technology (AIT). There is great interest in the cache community to incorporate some form of AIT in cache operations to realize increased accuracy and efficiency. The ICBS-R project scope, documented in the charter, directs the project to include this capability, “The system design shall include provisions for use of external input devices such as barcode readers, light pencils, smartcard, and other types of technologies.”

Other AIT Efforts:

- In 1999, ASAP Inc. investigated cache processes at the Great Basin Cache in Boise and proposed a “Radio Frequency Automatic Data Collection (RF-ADC)” package to “greatly improve the productivity in the National Fire Equipment System.” Their proposed technology would automate the physical inventory, receiving and returns processes. The system architecture would consist of:
 - A client/server middleware package including:
 - PC-based GUI program that creates menus and screens for handheld devices
 - Relational database to format data files for input into ICBS Oracle database
 - Communications component to control the RF hardware network and communicate with the Oracle database
 - Windows-based bar code label design and printing software).
 - System hardware including:
 - RF access point radios to connect to current Ethernet network
 - Handheld data collection/bar code reader devices
 - dedicated bar code printers

- In (YYYY) the Alaska Incident Support Cache at Fort Wainwright, Alaska introduced bar code scanning technology to automate its physical inventory, receiving and returns processes. Alaska uses a unique inventory program called InProTrak rather than ICBS. The AIT architecture consists of the following:
 - <<Describe AFS system and hardware here
- The Department of Defense (DOD) is implementing passive RFID in the entire supply chain. All suppliers will be required to affix passive RFID tags to each pieces/case/pallet supplied to DOD by January 2005. This could affect DLA supplies received by caches.
- GSA currently includes an “Issue Release/Receipt Document 1348-A (IRRD)” with each container shipped to fire caches. This document includes three bar codes (3 “1D” and 1 “2D” bar codes) with information such as document number, National Stocking Number (NSN), quantity, unit of issue, etc. GSA shipping labels include bar code(s) with the piece number, consignee activity address code and TCN (Transportation Control Number). GSA vendor container labels also include a variety of 1D and 2D labels with information that could be useful to caches.
- The Incident Base Automation (IBA) Project is currently interested in investigating AIT for use with various incident-based applications. The ICBS-R and IBA projects will collaborate on this AIT evaluation in order to avoid duplication of effort.
- The Forest Service San Dimas Technology Center (STDC) is currently assisting the Incident Base Automation Project.
- The Enterprise Access Control System Project is introducing smart card technology throughout the BLM for personnel access to buildings and elevators; to operate agency PCs; and for tracking property. Depending on the eventual scope of this initiative, this could affect supplies stored in BLM caches – most likely accountable property items.

The Job At Hand:

The AIT Task Group should investigate:

- Current bar code technology and processes used in the Alaska Incident Support Cache’s InProTrak inventory system
- Current and emerging technology and processes in the private sector
- Labeling/tagging technology currently used by cache suppliers (e.g. GSA, DLA and commercial vendors) and technology that is in the pipeline to be adopted by those suppliers
- Parallel efforts by other projects such as the BLM’s Enterprise Access Control System and NWCG’s Incident Base Automation Project

The task group should document:

- “Lessons learned” in order to avoid unnecessary effort and expense to the ICBS-R project and the caches
- Opportunities to capitalize on bar code labeling currently affixed to GSA (and perhaps DLA) shipping labels/boxes to minimize the effort required to add bar code scanning capability on a system-wide basis to the national cache system

- Opportunities to capitalize on AIT efforts at the incident level in order to maximize compatibility between cache and incident technology
- Recommended cache processes for keyboard/AIT input (e.g. physical inventory, receiving, issuing, etc.)
- Recommended label/tag/smart card code standards (e.g. ANSI/AIM BC4-1999 International Symbology Specification Code 128, PDF 417, GSC-IS, etc.)
- Recommended standards for label materials
- Recommended standards for the scanning device hardware (in terms of types, manufacturer/model, etc.)
- Recommended standards for any external or middle-ware systems
- Implementation recommendations
- Rough cost estimates for recommended technologies
- Supporting analysis showing cost comparisons and decision process for recommendations

The ICBS-R Project business analyst, Tani Converse, will help the AIT Task Group organize to complete this work.

Some vendors have submitted proposals to the ICBS-R team describing commercial off-the-shelf (COTS) and government off-the-shelf (GOTS) inventory systems with AIT capability. This information will be provided to the AIT Task Group.