ACPINS Makes Management Easier

Are you scratching your head trying to identify the most current version or revision of your software? Do you know who is using it and where? Do you need customized management reports for all those briefings? The Automated Computer Program Identification Number System (ACPINS) can help.

Air Force Materiel Command (AFMC) projects a 14 percent growth in software inventory by fiscal 2000. If all of the Air Force sees this kind of expansion, configuration management will become even more challenging. The ACPINS is a tool that can make this job easier for developers, users, and managers.

Managed by OC-ALC/TILUC, CPIN System Section, at Tinker Air Force Base, Oklahoma, this online standardized Automated Information System collects and maintains data used to identify, manage, catalog, requisition and distribute Embedded Computer Resources software for the Air Force. ACPINS supports the global software needs of defensive weapon systems, tactical systems, aircraft, missiles, ships, communications, command and control, and spacecraft.

AFMC supports approximately 5,300 embedded computer systems. This also includes approximately 98,466 associated Computer Program Identification Numbers (CPINs) assigned to computer software configuration items and their related engineering documentation packages. Projections for fiscal 2000 indicate AFMC will support 9,225 embedded computer resource systems, and approximately 115,000 related CPINs.

Unique Designators Help Tracking

Computer software configuration items and related engineering documentation are developed simultaneously along with hardware and support equipment when a weapons system is acquired. These are identified by computer program identification numbers—standardized, unique designators used to track the configuration of computer software configuration items and related engineering documentation during its life cycle. The CPIN identifies product baseline software, coexistent versions, and revisions that occur after the baselined item or version is distributed.

CPINs often are requested and assigned during the full-scale development phase, prior to the critical design review. However, for systems or subsystems that are past the critical design review, the request is made as soon as possible afterward. Early assignment of a CPIN enables the software developer or manager to include:

- The CPIN identifier in the documentation.
- The contents of the operator instruction manuals, or applicable technical orders.
- An identifier that can be affixed to the program media (tape leader, disk pack, etc.).

A CPIN identifier is also used on the title page of the engineering documentation package.

Assigning a CPIN early in the life cycle of computer software configuration items also allows indexing in the CPIN compendium.

CPIN compendiums are consolidated indexes, which list CPIN identifiers and related information. The compendiums announce pending computer software configuration item releases, reflect status of computer software configuration items, and provide timely information and descriptive data on new, updated, current, and inactive software and related engineering documentation. The CPIN compendiums also are used to identify software needed for research purposes, to update files and records, to reference inventory, and to establish requirements for initial distribution and one-time software requisitions.

All compendiums are available online as well as in microfiche form. The forward of each microfiche compendium contains general information relative to the CPIN System and detailed instructions for using the compendium. Microfiche compendiums are produced as funds are available.

There are five general types of CPIN compendiums: index of compendiums, cross-references, Air Force compendiums, command compendiums, and country compendiums. They are briefly described as follows:

- Index of compendiums provides managers and customers a current list of CPIN compendiums and cross-references.
- Cross-references are designed to serve as quick references or research aids for CPIN association to selected data elements.
- Air Force compendiums contain lists of CPINs and related information. They are updated through daily processing in the ACPIN system as revisions, and are available online, or are published in microfiche form no more frequently than every 180 days.
- Command compendiums list only command-managed CPINs and related engineering documentation.
- Country compendiums contain lists of CPINs and cross-reference data, which are applicable to a specific foreign country.

System Boosts Mission Capability

In addition to enhancing configuration management, ACPINS offers the Air Force increased mission capability, convenience, customized management reports, and security.

ACPINS boosts mission capability by allowing customers/users to almost instantly see information about newly assigned basic CPINs, revisions, versions, updates, and changes. Online compendium changes are up-to-the-minute, and give technical order distribution offices (TODOs) a heads-up to review their requirements. Computer software requirements lists are available through e-mail in minutes, instead of days or weeks. In addition, TODOs can have their requirement request—Order (AFTO 157)—approved and their software shipped from the Software Control Centers (SCCs) in just hours.

The system also eliminates duplication, therefore eliminating excess production costs, for software centers and managers. Questions about weapon system order issues are resolved as they surface. Mission capability will increase even more with additional system improvements on the horizon. The online ACPIN System has taken advantage of technology and transitioned to a Web-based system.

ACPINS Automates FMS Approvals Process

One of the conveniences of ACPINS is the faster handling of requests for Foreign Military Sales/Security Assistance software and compendiums. Customers submit an Order (AFTO Form 157) request, which contain an Air Force TODO code assigned by a Security Assistance Technical Order Distribution System (SATODS). The request is forwarded through a country TODO, the CPIN System Section Foreign Military Sales (FMS) point of contact, or to the prime managing center.

The data is entered into the database, where ACPINS verifies case status. If the case is current and reflects a monetary balance sufficient to pay for the items, the request is processed. When shipment is completed, shipping information is entered into the database and transmitted by daily interface to the SATODS.

FMS compendiums and cross-references may be accessed by Software Control Centers, equipment specialists, and program managers. Approvals/disapprovals by these individuals for country requests are processed online. Specific access will be available for the Foreign Disclosure Officers.

At this time, foreign nationals obtain compendiums and cross-references on diskettes or microfiche. Future plans include producing compendiums on compact discs. Later, FMS customers will have access to the Web.

ACPINS Customizes Management Reports

Collected and stored data for each software item, and related engineering documentation, may be extracted from the ACPIN database and formatted into various customized management products. They assist software managers at all levels in accomplishing configuration management and provide managers an overview of software systems, subsystems, related applications and documentation packages. These products are available online and may also be obtained by requesting the report from the CPIN System Section.

Reject notices are produced by the ACPINS database as transaction process, or Software Control Centers and the CPIN System Section may produce notices for mailing. Mailing and media identification labels also are produced by the Software Control Centers and the CPIN System Section as needed.

System Processes Unclassified Data

All data processed within the ACPIN System is unclassified. Data elements may relate to classified software and/or engineering documentation packages, but no classified information is entered in, processed, stored, or output by the ACPIN System. Access to the system and the databases is managed through system controls and customer passwords based on multilevel access approvals granted by the ACPIN System Managers.

Firewalls also are installed and encryption is in place on the Web-based system. Most ACPINS customers already have user identification and passwords for system access.

ACPINS database access is provided via personal computers through a communications network using compatible hardware. Access is available to Air Force software developers, system managers, system program offices, inventory managers, and equipment specialists, software managers and engineers, SCCs, Major Commands, Development Engineering Prototype Sites, Air Force Meteorology and Calibration Program, and other users.

ACPINS Traces Roots to Batch Processing

The original CPIN System began as a manual system using single manager storing data in a technical order configuration consisting of check-tapes. The system integrated to batch process and evolved into today's automated online system. The concept of a distributed database to facilitate tracking the software began in 1989. However, as the needs of the customers grew, and the system took shape, the concept changed to a centralized distributed processing database with network access.

The CPIN System today processes data on the E3000, Sun Sparc20 Server in a UNIX environment. Data is entered through personal computers or SUN workstations, which interface with the central database located in the OC-ALC CPIN System Section. Information includes Numbering (AF Form 1243), ACPIN Data and Control Record, data which establishes and maintains CPIN records, and Orders (AFTO Form 157), computer program configuration item request, data which establishes and controls software requirements and distribution. Existing data systems satisfy storage of selective portions of software configuration management data and customer requirements, which are output on paper, microfiche, and online products.

The HQ Air Force Materiel Command, office of primary responsibility, carries out overall management duties and provides general policy and guidance for the ACPIN System. Computer Resources Support Improvement Program (CRSIP OO-ALC/TI-3) is acting as the Configuration Control Board for the modifications of the ACPINS.

OC-ALC/TILUC serves as the mission activity responsible for the ACPINS operation, budgeting and funding for maintenance, and life cycle management.

Increased demands on managers' time and resources has made it even more important to use existing assets to the fullest extent possible. Utilizing the ACPIN system is the most efficient and cost-effective way to do business.

About the Author

Gerald Ozment is Chief of the CPIN System Section at Oklahoma City Air Logistics Center. He is responsible for enhancing and managing the ACPINS. In addition, the section is the Air Force and AFMC focal point for the development, identification, indexing management, and establishment of customer requirements for embedded computer software used in most weapon systems and support equipment in the Air Force. Ozment has been associated with the system for approximately 18 months. He has spent 40 years in federal service, 21 years of which were in the Air Force.

OC-ALC/TILUC
7851 Arnold St, Ste 205
Tinker Air Force Base, Okla.73145-9147
Voice: 405-736-2227 DSN: 336-2227
Toll Free: 888-742-4461
FAX: 405-736-7734 DSN: 336-7734
E-mail: Gerald.Ozment@tinker.af.mil