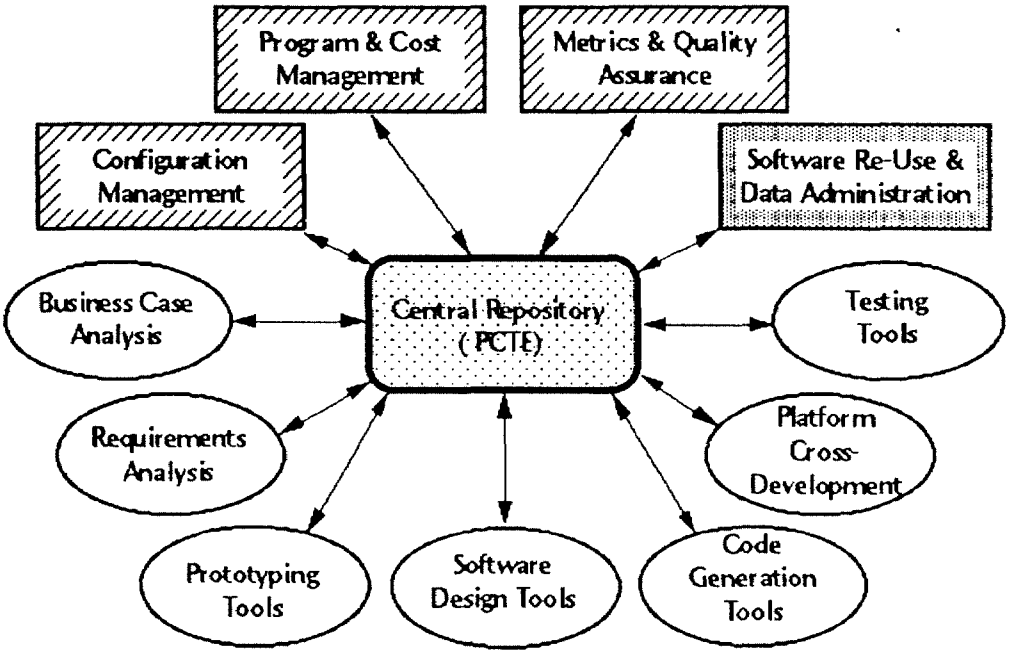
OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE
3E 240, The Pentagon, Washington, D.C. 20301-3040

August 8, 1992

To: Duane Andrews
From: Paul A. Strassmann
Subject: I-CASE (Integrated Computer-Aided Systems Engineering)

Last week a Selection Advisory Council met at Gunter AFB and approved proceeding with the I-CASE RFP that will become binding for all future CIM software development and maintenance. DoD can expect that software acquisition will take place under controlled conditions which will emphasize security, reliability and re-use economics.

On account of the strategic importance of this program I thought you would find it of interest to see a summary of I-CASE functions:



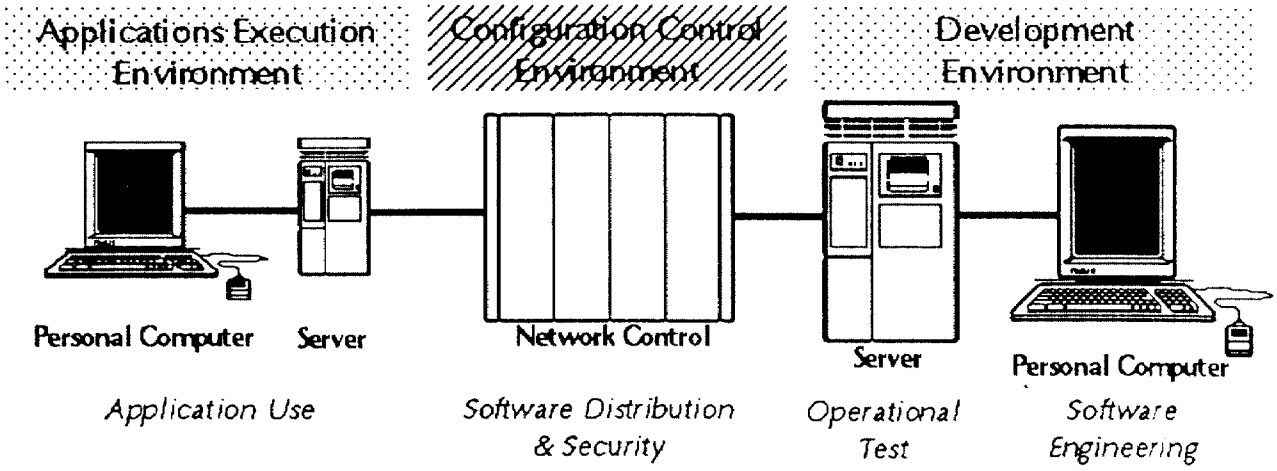
The I-CASE approach is based on the concept of separation of development, control and execution environments. As consequence:

- Computer software will be created on much more powerful workstations than used in actual applications;
- Testing and code verification will take place in a different environment than the actual running of applications;
- Software distribution would be handled through network control;
- Re-use and integration testing will take place under standard conditions;

• Central configuration management will safeguard software against intrusion and unauthorized modifications;

• If technology development makes it necessary to upgrade customer equipment, the new run-time code will be re-manufactured rather than modified. This approach will preserve the useful life of software components over several hardware generations.

The following diagram will provide an indication of the separation between the development, control and execution software environments:



Massive amounts of retraining will be necessary to migrate the existing software development staffs into the I-CASE environment.

This initiative has far-reaching implications on the future of software development in DoD and is expected to accelerate the introduction of applications that keep pace with industry developments.

Paul

ic: D.Brown, Cavallini, Jeffcoat, Fraser, Grimes, Hansen, DDI Staff, Quinn, Reis, Ryan, Schanzer, Short, Shycoff, Stewart

other federal agencies. System support services will be initiated as required by submission of task orders.

- User Support Services: Provides user support services as required by the Government. Services include implementation planning, development environment migration, site installation support, change management, and information/software engineering services. User support services will be initiated as required by submission of task orders under this contract.
- Hardware: Provides hardware necessary to meet the requirements of the I-CASE Software Engineering Environment. Warranties, spare parts, documentation, and updates/upgrades for hardware will also be provided.
- Software: Provides all software for use within the I-CASE software engineering and run-time environments. Software licenses and documentation for each approved software end-item will be included.
- Hardware Maintenance: Provides various options to maintain all I-CASE hardware items. These options include, but are not limited to, user remove-and-replace maintenance, Contractor maintenance, diagnostics, and Built-In-Test (BIT).
- Software Maintenance: Provides annual maintenance options, including updates, upgrades, and associated documentation for all I-CASE software items available under this contract.
- Training: Provides management courses, user training, and instructor training for I-CASE users at Government or Contractor facilities.

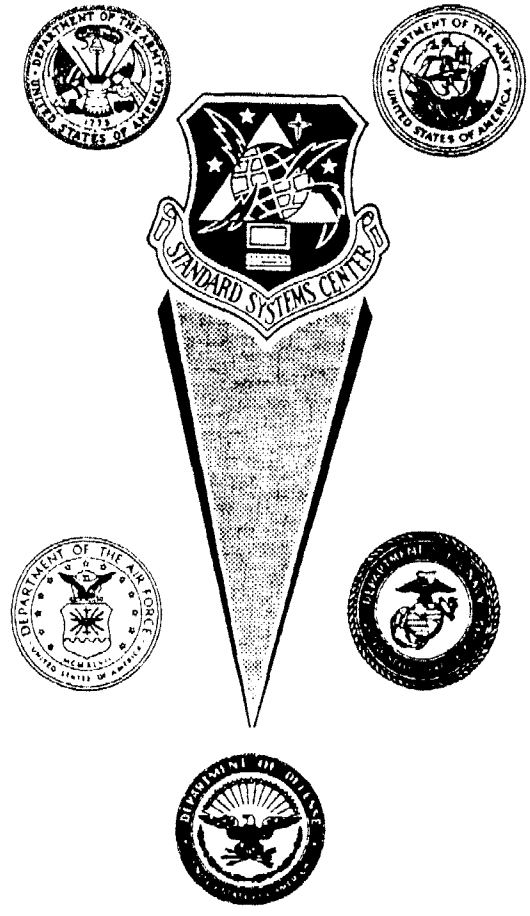
verall responsibility and authority for I-CASE has en assigned to the Standard Systems Center (SSC), unter AFB, AL. The Program Manager is Col John . ("Gary") Case, Jr., SSC/XPI, DSN 596-3511.

Additional information on I-CASE and electronic versions of the latest solicitation documents are available on the SSC electronic bulletin board (BBS). To access the SSC BBS, use a modem to call (205) 416-5653. Log in using your name and a password of your choosing. Select Option 1 at the main menu to access the I-CASE section. The SSC BBS supports 300, 1200, 2400, and 9600 (V.32) baud at 8 data bits, no parity, and one stop bit (8N1) using either ANSI or ASCII terminal emulations. Complete directions and help are provided in a downloadable file called HELP.ASC. File transfer protocols supported include XMODEM, YMODEM, ZMODEM, and KERMIT. If difficulty is encountered with the SSC BBS, around-the-clock assistance is available by calling (205) 416-5771 and stating that the call pertains to SSC BBS assistance.

The latest I-CASE solicitation documents are formatted in and require Microsoft Word for Windows Version 1.1, Microsoft Windows version 3.0, and at least 3 MB of available disk space.

Any questions or comments should be submitted to the SSC BBS or in writing to Ms Rose Smith, SSC/XPI, Building 888, Gunter AFB AL 36114-5000, telefax (205) 416-5796 or DSN 596-5796.

INTEGRATED COMPUTER-AIDED SOFTWARE ENGINEERING (I-CASE)



I-CASE PROGRAM MANAGEMENT OFFICE

STANDARD SYSTEMS CENTER
SSC/XPI
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I-CASE — THE TOTAL SOLUTION

The Integrated Computer-Aided Software Engineering (I-CASE) acquisition will provide DOD Central Design Activities with state-of-the-art software engineering environments. I-CASE will be a combination of commercial off-the-shelf (COTS) hardware and software components and run-time licenses designed to provide automated tool support for software development, maintenance, and reengineering of Automated Information Systems (AIS) applications. I-CASE will provide a contract for DOD users to purchase an integrated set of tools that will automate many of the AIS software development activities over the entire software development and maintenance life-cycle. I-CASE will also provide the support elements necessary to implement, operate, and maintain the I-CASE environment (i.e., training, maintenance, technical support, etc.).

I-CASE requires the software engineering environment to encircle an integrated information repository where all software development information is stored. Figure 1 shows the central repository and its associated functional components (the ovals). External interfaces to the repository that support reuse, data administration, and metrics are shown in the rectangle. The repository is critical in improving the management of software production and quality. Integration of the environment provides flexibility in the future by allowing new standard technology to be introduced as it becomes available. The repository serves as a hub of information for any given software project, allowing project management, configuration management, and quality assurance to be integrated into the entire software process.

The I-CASE environment will meet the following standards and principles:

- High Order Language code generation (preferably Ada);
- Structured Query Language (SQL) interface;
- X Windows for designing end-user interfaces;
- POSIX operating environment;
- Information engineering discipline within the software development environment (NIST Reference Model for Frameworks of Software Engineering Environments);
- GOSIP compliance;
- Rapid prototyping of end-user requirements prior to design; and
- Applicable DOD documentation standards for military software development.

INTEGRATED SOFTWARE ENGINEERING ENVIRONMENT

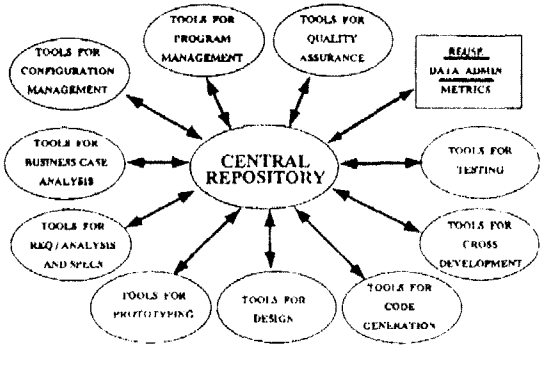

FIGURE 1

As illustrated in Figure 2, the I-CASE Environment is composed of three distinct components: the Software Engineering Environment (SEE); the Operational Test Environment (OTE); and the Application Execution Environment (AEE). The I-CASE SEE includes Contractor-furnished hardware and software items needed to perform software development and maintenance. The I-CASE OTE includes Government-furnished hardware from standard DOD hardware contracts and Contractor-furnished I-CASE test and run-time software items. The I-CASE AEE includes Government-furnished hardware from standard DOD hardware contracts and Contractor-furni I-CASE run-time software items. The SEE and are envisioned as being colocated as Soft Development Environments. Operational cod released to run-time sites (AEE's) in binary for All maintenance and modifications are perform the software development environments.

I-CASE OPERATIONAL CONCEPT

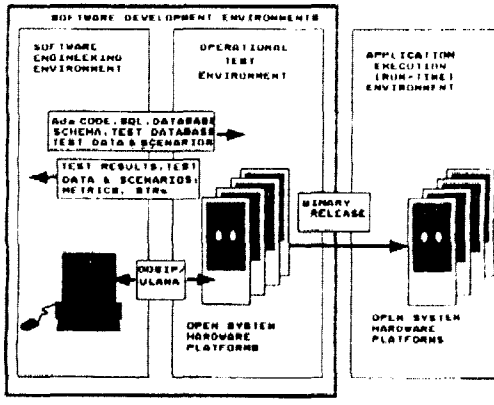

FIGURE 2

The following components are planned as part o I-CASE contract:

- Integration Support: Provides ong Integration Support activities as require support all current products and delivery or issued under I-CASE. Contractor Integra Support activities include implementa planning, configuration management, management, risk mitigation, informa security management, training managen technology refreshment, environn maintenance management plann environment test and evaluation planning integrated logistics support.
- System Support Services: Provides a complement of system support service meet the I-CASE engineering, support, management needs of participating DOD