

## APPLIED INTELLIGENCE

## Implementation Across AS/400 Is Key to SAA's Success


**JAMES  
MARTIN**

*This is the fifth part of a series on IBM's midrange computer family, the AS/400, a pivotal part of IBM's strategy to provide greatly enhanced consistency and connectivity across multiple supported environments.*

Systems Application Architecture (SAA) is IBM's strategic direction to provide an integrated computing environment across multiple supported platforms. The objectives of SAA include the following:

- consistent user interfaces, programming interfaces, communication interfaces and common applications across multiple hardware platforms;
- common database access and distributed database management throughout a network;
- cooperative processing, providing the means to distribute processing functions transparently across multiple supported environments; and
- advanced connectivity support for peer-to-peer communications between diverse computer systems and sophisticated network management.

These objectives will be achieved by the implementation of common applications and application-enabling tools across three strategic SAA platforms: the System/370 under MVS/ESA and VM/CMS, the AS/400 under OS/400 and the PS/2 under OS/2 Extended Edition.

Users who adopt SAA standards in their shops can take advantage of the extensive software support that will be made available in stages to support the downsizing of applications, cooperative processing, distributed data and greatly increased connectivity. SAA-compliant software can be ported among supported platforms with a minimum of conversion effort or expense.

SAA removes much of the guesswork involved in planning for system growth. It outlines IBM's strategic application-software environments and defines the types of interfaces compatible with these environments.

Many of the SAA guidelines are still vague and much information remains to be published; however, information systems managers willing to develop applications within the SAA framework will position themselves to benefit from IBM's strategic direction. They protect themselves from a premature obsolescence of software and hardware. And they take advantage of forthcoming new applications, distributed applications support, relational database capabilities and improved productivity.

By defining the platforms supported by SAA, IBM has identified those processing environments considered strategic to its future growth.

However, not all strategic products fully participate in SAA. CICS/MVS and IMS/DC, for example, comply only partly with SAA guidelines and are inher-

ently unsuitable technologically for full inclusion in SAA.

SAA can be described as a collection of selected software interfaces, conventions and protocols that provide greater consistency across IBM's business computing platforms. SAA consists of four related elements:

- the Common User Access (CUA), which describes how users interact with an application;
- the Common Programming Interface (CPI), which describes the languages and services that applications developers need in order to build applications;
- the Common Communications Support (CCS), which describes connectivity

likely that the AS/400 will implement SAA guidelines earlier and probably more completely than other IBM hardware platforms. The following is a status summary of each major SAA interface for the AS/400.

**Common User Access:** The AS/400 user interface today implements most of the CUA guidelines for host-dependent workstations. This CUA support includes semantic consistency and user-orientation standards (function keys).

Major elements not yet implemented include cursor selection and mnemonic selection of objects, pop-up windows and action bars.

There is a commitment to support

ANSI SQL. IBM is working to remedy all these limitations.

An SAA-compliant version of the C language is expected to be available for the AS/400 in the second half of the year. A procedures language based on REXX is likely to be available for the AS/400 in 1990.

IBM is expected to provide a CSP runtime execution environment for the AS/400 this year. The CSP execution environment will allow code developed on a System/370 or PC to be executed on an AS/400.

The AS/400 operating system currently does not support an SAA-compatible dialogue interface; current dialogue support is sophisticated and easy to use, but it's not portable to other systems. An SAA dialogue manager is not expected to be made available on the AS/400 for at least the next year.

**Common Communications Support:** In contrast to its rather weak support for the SAA programming standards, the AS/400 offers comprehensive SAA communications facilities. These facilities are fully integrated with the operating system and need not be purchased as separate software products.

Common communications facilities and protocols supported by OS/400 include 3270 data streams, Document Content Architecture (DCA), Intelligent Printer Data Stream (IPDS), SNA Distribution Services (SNADS), Document Interchange Architecture (DIA), SNA Network Management Architecture, and Distributed Data Management Architecture (DDM). The LU Type 6.2 peer-to-peer communications protocol is supported by OS/400. It forms the basis for personal computer connectivity.

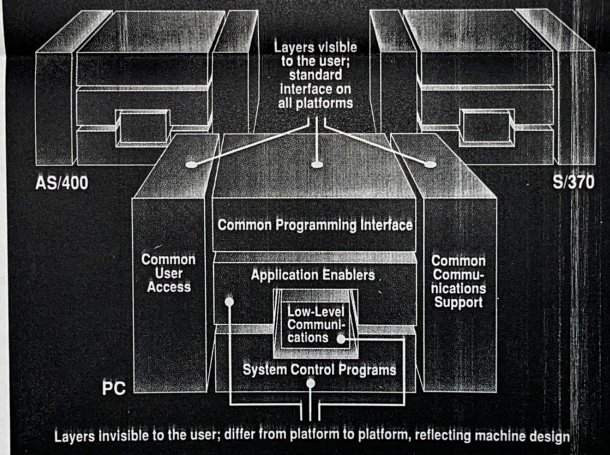
Support for low-entry networking (LEN) architecture is provided as part of the operating system Advanced Peer-to-Peer Networking (APPN) functions. Data-link-control protocols supported by the AS/400 include X.25 packet switching, Synchronous Data Link Control (SDLC) and the IBM Token-Ring Network.

SAA represents a major step forward by IBM. But its success will depend on its acceptance by the software industry and the user community. It's likely that some elements of SAA will be embraced more than others. For example, CSP in its current implementation provides little or no additional capability to AS/400 applications developers. Overall, SAA will provide a framework and a direction for software developers for at least the next decade.

Next week, I'll look at current application-development strategies for the AS/400. ■

## SAA Provides Identical Software Structure Across Platforms

Users and Programs Interact with Common External Interfaces



John Avakian

*The AS/400, to date, doesn't implement SAA standards. However, it's likely that the AS/400 will implement the guidelines earlier and more completely than any other IBM platforms.*

standards for systems and applications; and

- Common Applications, which are application-software packages developed by IBM and independent software vendors according to the SAA guidelines, and which are implemented across multiple platforms.

The chart shows the common set of software interfaces, conventions and protocols that are supported across the mainframe, midrange and PC environments.

Although widely touted as "the SAA machine," the AS/400, to date, does not implement anything close to a full complement of SAA standards. However, it's

these facilities in a future release of the operating system.

The implementation of a graphics-oriented user interface awaits the introduction of AS/400 Presentation Manager and the complete integration of the intelligent workstation.

**Common Programming Interface:** SAA programming support is probably the weakest area of support on the AS/400 today. SAA programming languages currently supported on the AS/400 include RPG III and COBOL 85. The AS/400 does not support the C language, REXX or CSP. Current Structured Query Language (SQL) support is limited to a severely restricted subset of

*The James Martin Productivity Series, an information service updated quarterly, is available through High Productivity Software Inc., of Marblehead, Mass. (800) 242-1240. For information on seminars, please contact (in the United States and Canada) Technology Transfer Institute, 741 10th St., Santa Monica, Calif. 90402 (213) 394-8305. In Europe, contact Savant, 2 New St., Carnforth, Lancs., LA5 9BX United Kingdom (0524) 734 505.*