



IBM System/7 Enhancements

5010E Processor Module

5010E Processor is an enhanced model of the existing 5010A and B Processor family. These enhancements consist of:

- Expanded monolithic storage — 5010E begins at 16K words and increases in 4K word increments to a maximum 64K words.
- Processor cycle time is 400 nano-seconds.
- 5010E is housed in 5026A2 or 5026CX enclosure.

Standard features include:

- Seven new instructions
- Storage protection (512 words per block)

Service Features

- Improved maintenance package:
- Reduced average card callouts per failure.
 - Reduced number of MAP pages searched to arrive at a solution.
 - Diagnostics sequence rearranged on the cassette to provide faster problem definition.

An improved package will also be released for 5010A and B.

Education

- Product trained CE will require no additional training.
- Product support trained CE will require four-hour self-study course.

BSCA Feature Attachment

Binary Synchronous Communication Adapter (BSCA) is a feature available on 5010 Models A or E. It consists of one TP adapter which can operate over switched or leased lines in half duplex mode. Transmission speeds range from 1200 bps to 50K bps.

This feature allows the System/7 to communicate with:

- System/370 Models 115, 125, and 135 via the integrated communication adapter.
- System/370 Model 115 and larger via 2701 and 2703.
- System/370 Model 125 and larger via the 3704/3705 with NCP/VS.

- System/370 Model 115 and larger via 3704/3705 operating in emulator mode.
- System/3 Models 6, 10, and 15 via System/3 BSCA.
- System/7 5010 Models A or E via BSCA.

Service Features

- An exerciser program is provided (in paper tape) which will allow the customer, *if he so desires*, to wrap test the BSCA feature. This will allow him to determine if the problem is an IBM problem prior to placing a service call.
- Twelve lights are available to the CE to aid in BSCA problem definition.
- Two diagnostic programs are available to the CE.
 - . Wrap test with FRU locating capabilities used in conjunction with MAP charts.
 - . Down line test to allow exercising the lines to another system.

Education

- Product trained CE will require no additional training.
- Product support CE will receive a four-day education center course.
- Area designated and FTSC specialist will receive the four-day education center course plus two additional days of hands-on lab.

Low Cost Sensor I/O

● 5012 Multifunction Module

Two new features are:

- Low cost Digital Input (DI) — This feature provides a low cost non-isolated group of sixteen DI points.
- Low cost Digital Output (DO) — This feature provides an electronic high-speed contact output capable of driving devices with up to 450 milliamps. It provides sixteen non-isolated switches.

Education

No additional training is required for these features.

● 5014 Analog Input Module

Three new modules and one expansion feature have been added to the 5014 family. These consist of:

- 5014 B1 Expansion Feature
- 5014 D
- 5014 E1
- 5014 E2

5014 B1 Expansion Feature

- Permits the attachment of 5014 E2 (two maximum) to a 5014 B1.
- Allows a maximum of 384 AI multiplexed points.
- 5014 E2 utilizes mercury wetted relays.
- 5014 E2 utilizes the analog circuitry in the 5014 B1.
- Points driven at 200 points per second.

Low Cost Sensor I/O (cont'd)

5014 D Module

- New low cost AI module.
- Up to 128 points of AI.
- Mercury wetted relay multiplexer and/or new low cost dry contact relay multiplexer.
- Points driven at 100 points per second
- 5014 E1 (two maximum) may be attached to increase maximum number of points to 384.
- 5014 E1 utilizes analog circuitry contained in the 5014 D module.

5014 E1 and E2 Modules

- Consist of a frame which may be populated with multiplexer cards.
- Must be located directly beneath 5014 B1 or 5014 D.

Service Features

- New CE multiplexer card.
- Diagnostic program used in conjunction with multiplexer card.
- CE card may be left in an unused position. Diagnostic will automatically invoke fixed voltages on this card, thus decreasing test time and problem definition.

Education

No additional training required.

Programming Support

● System/7 Program Preparation Facilities (PPF)

A complementary addition to System/7 Host Program Preparation Facilities which allows the preparation of System/7 programs on the System/7.

Highlights

- An enhanced DSS/7 nucleus to supervise standalone program preparation on the System/7.
- A standalone macro assembler which is language compatible with, and which produces object code equivalent to the host program preparation assembler; also supports the new instructions associated with the System/7 Model E Processor Module.
- A standalone linkage editor to link-edit relocatable object modules produced by language translators.

- A standalone FORTRAN IV Compiler and Library program product incorporating sensor-based subroutines as defined by the Instrument Society of America (ISA Standard S61.1). (A program product with Class A Service.)
- A System/7 resident MACRO LIBRARY/RELOCATABLE provides an extension of the System/7 Assembler Language by supplying IBM supported control routines.
- A format facility compatible with the host format facility to prepare executable System/7 storage loads.

FE Education

- 13 days - education center for PPF
- 3 days - education center for FORTRAN Compiler

Programming Support (cont'd)

● Modular System Programs/7 Enhancements (MSP/7)

Currently available MSP/7 support has been enhanced and made available to the standalone System/7 environment. Host MSP/7 support will likewise be enhanced to maintain the compatibility between the two System/7 program preparation methods.

Highlights

- A new data management extension, the Sequential Access Method, to provide sequential device independent input and output at the logical record (GET/PUT) level.
- A communications access method to support BSCA at the logical record (GET/PUT) level and the read/write level.
- A new real-time facility, Simultaneous Disk Services, which is incorporated into the user's process program to support disk input or output concurrent with the execution of the process program.
- A new service program, the Source Library Editor, to support the IBM systems engineer and customer engineer in the tailoring of the user's operational pack and in the application of source PTFs; can also be used to create and maintain source files for the language processors.
- Enhancements to current DSS/7 service programs to utilize the Sequential Access Method.
- The ability to load relocatable programs.
- Extensions to the DSS/7 command language to control the program preparation and loading process.

- Complete standalone program preparation procedures in the form of predefined catalog procedures shipped with the programming support.
- Documentation to fully describe and guide the user in preparing his standalone program preparation operational pack.

Sensor-Based Installation Service (SBIS)

IBM has announced the implementation of Sensor-Based Installation Service which is a joint DP, FE, and GSD program to improve the efficiency of installation of IBM sensor-based systems.

Sensor-Based Installation Service consists of two major elements, Services and an Organization.

Services

- Subsystem Physical Planning Assistance - Now provided in addition to previously provided System Physical Planning Assistance, at no additional charge.
- Installation Guidance Service - Provides IBM guidance to customer on planning and installation of subsystem, through FE Contract Support Services (CSS) Agreement.
- Installation Management Service - Provides for IBM acceptance of responsibility for planning and installation of the subsystem, through FE Contract Support Services (CSS) Agreement.
- Subsystem Definition RPQs - For some applications, complete definition of portions of the subsystem are available from IBM through DP by means of RPQ.

**Sensor-Based Installation Service
(SBIS) (cont'd)**

● **Organization Structure and
Responsibilities**

DP Division

An individual in each District has been assigned responsibility for coordination of Sensor-Based Installation Service throughout his District. He will provide guidance to the DP branch offices in the the proposal and planning of sensor-based systems, and will be the interface to the Sensor-Based Installation Service functions of the FE and GS Divisions.

FE Division

Installation Planning Representatives (IPRs) for sensor-based systems have been named on an Area basis to provide subsystem physical planning assistance to the customer, and to assist the FE branch office in handling of CSS (Contract Support Services) contracts for installation of sensor-based subsystems. They will also be the FE interface to the Sensor-Based Installation Service functions of the DP and GS Divisions.

GS Division

The GS Division has established an Installation Support Center at Boca Raton, to provide in-depth guidance and support to the field through the DP and FE representatives described above.

Sensor-Based Installation services are only available to IBM customers incidental to the installation of IBM equipment for use in a sensor-based environment.

International Business Machines Corporation
Field Engineering Division
1133 Westchester Avenue
White Plains, New York 10604

IBM®

Printed in U.S.A. G229-8030-0

IBM and the IBM logo are trademarks of International Business Machines Corporation.