TENET   MODEL 210

Look into Tenet.

SOFTWARE

The Tenet 210 offers these high level languages and software:

TENET BASIC
□ User interacts with program in the same language as the one in which program is written. □ User can interrupt program, display and modify data, and continue at any point in the program. □ Unique DO statement gives concise method of selecting groups of statements to be executed at selected points in the program. □ String manipulation capability allows for variable-length strings of up to 255 characters. □ Four-character variables (i.e., CASH, TIME, DEBT) result in a more readable program. □ User may define multi-line functions with argument passing and local variables.

FORTRAN IV
□ Full FORTRAN IV-H language. □ User interacts with program in the same language as the one in which program is written. □ User can interrupt program, display and modify data, and continue at any point in the program.

BOTH TENET BASIC AND FORTRAN IV
□ Each file can contain up to eight million characters. □ User can access up to eight files simultaneously. □ Each file can contain either fixed-length or variable-length records. □ Each file can be accessed either sequentially or randomly. □ Statements entered without statement numbers are executed immediately. □ User program is executed immediately in response to RUN. □ Program linking allows unlimited program size. □ Fifteen-digit precision. □ Full complex arithmetic capability.

EDITOR
□ Lines can be copied, moved, deleted, inserted, or replaced. □ Strings can be deleted, inserted, or replaced within a line. □ Any line can be accessed by specifying the characters in the line or the line numbers. □ Files can be concatenated. □ A single file can be separated into multiple files. □ Rules for using the EDITOR are simple and easy to remember.

META ASSEMBLER
□ Enables user to define his own programming language and thus program his problem in a language more suitable to his needs.

RELOCATABLE LINKING LOADER
□ Loads one or more meta-assembler-produced binary object modules and links their external symbols. □ Accepts patches. □ Generates external symbol map listing.

DEBUG
□ Provides the user with a compact yet comprehensive debugging aid. □ Allows the user to examine memory and register values. □ Accepts memory and register patches. □ Permits the user to establish as many as 20 break points.

SUPER DEBUG
□ Provides the user with an extensive symbolic debugging aid. □ Allows the user to examine memory and register values. □ Accepts memory and register patches. □ Permits the user to establish as many as 20 break points. □ Conditional snapshots. □ Mnemonic instruction, insertion, and alteration.

MATHEMATICAL LIBRARY
□ Comprehensive real and complex mathematical library.

COMPREHENSIVE TEST DIAGNOSTICS
□ Complete set of diagnostics for testing the full instruction repertoire, the map, each of the peripherals, the interrupt system, and the memory.

The Tenet 210 is a large scale, interactive time-sharing computer designed specifically for remote terminal applications with anywhere from 32 to 128 simultaneous users on line. Its modular design will permit expansion to a 500 simultaneous users system. Without replacing a single piece of original equipment. Without obsolescence.

The ultimate system comprises multiple CPUs, a million byte core memory capacity, eight million byte semiconductor memory capacity, and a billion byte disc memory capacity. It provides remarkably low cost time-sharing potential for the full spectrum of computer users because it was designed from the start as a time-sharing system, optimized in every phase of design and construction to the special potentials and requirements of a large scale time-sharing system. It is capable of handling long and complex programs, has large file capacity, by far the best BASIC language yet introduced, every type of terminal over a wide range of speeds, remote job entry and text editing, an extensive mathematical and statistical library, precision to 15 decimal places, a complete and complex arithmetic library, full set of matrix operations and FORTRAN IV Level-H. The Tenet 210 is a user-oriented system.

Memory mapping: for better memory utilization, faster response.

Automatic hardware detection of page alteration: eliminating unnecessary page swapouts.

User-defined codes: reducing program size by providing single-argument subroutine linkages with a single instruction.

A rich machine instruction set: for more efficient memory utilization and faster program execution.

Program context switching in one instruction.
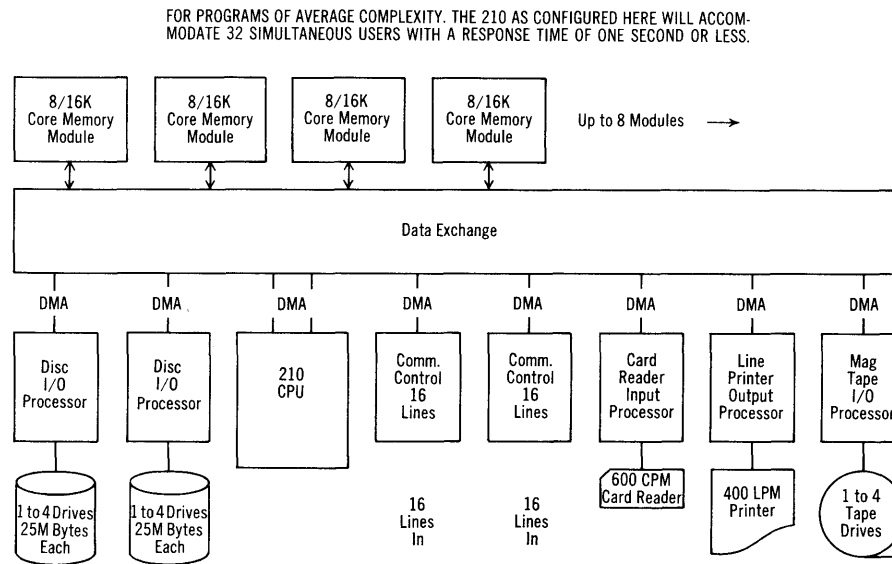
HARDWARE

Data Exchange: □ Multi-processor capability. □ Twenty bidirectional direct memory access channels with access priority. □ Twenty levels of nested interrupts, each level expandable to 16 levels. □ Four simultaneous channels to memory. □ Interface to as many as eight memory modules. □ Command chaining and data chaining (by the I/O processors) without CPU intervention. □ Priority control for memory access and interrupts.

Core Memory: □ Modularly expandable from 8K to 128K words (512K byte equivalent). □ Word length of 32 bits plus parity. □ Full cycle time of 800 nsec per memory module. □ Memory band width of 20 million bytes per second. □ Interleaving.

CPU: □ Permits real-time control and high-speed data acquisition. □ Word-oriented operation with field and bit capability. □ Direct addressing from primary instruction. □ Memory mapping (write protection, virtual addressing, page-altered status, no added execute time). □ Indirect addressing with pre-indexing or post-indexing. □ Eight high-speed general registers (seven for indexing). □ Eight addressable high-speed control registers. □ Nested real-time interrupts. □ Master/Slave modes. □ Automatic trap on error condition. □ Programmable instructions. □ Extensive instruction set with 208 assigned op codes. □ Interval timer.

TERMINALS
The first communications controller to be offered with the TENET 210 supports the Model 33 teletype and other terminals compatible with the Model 33. Options include direct wire connection or access via the public telephone network. Each communications controller supports 16 full-duplex channels. Direct connected terminals have teletype ON/OFF power features under program control.
The system is designed to support all types of remote terminals including video displays, remote job entry and keyboard input.

PERIPHERALS
Disc Storage: □ Removable 11-high disc packs, each with 25 million bytes. □ Up to four drives per IOP. □ Simultaneous seeks. □ Byte transfer rate of 312K/second. □ Hardware address verification.
Magnetic Tape: □ IBM-compatible. □ Nine channel. □ 800 bpi. □ Byte transfer rate of 36K/second. □ Up to four drives per IOP.
Line Printer: □ 400 or 1000 LPM models. □ 132 print positions. □ 64 characters. □ Fully buffered.
Punched Card: □ 600 CPM reader. □ 100 CPM punch.

FOR PROGRAMS OF AVERAGE COMPLEXITY. THE 210 AS CONFIGURED HERE WILL ACCOMMODATE 32 SIMULTANEOUS USERS WITH A RESPONSE TIME OF ONE SECOND OR LESS.

The Data Exchange provides 20 bi-directional DMA channels with access priority, and 20 levels of nested interrupts, each level expandable to 16 sub-levels.

The CPU has 8 general registers and 8 control registers.

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