

# INTERFACE

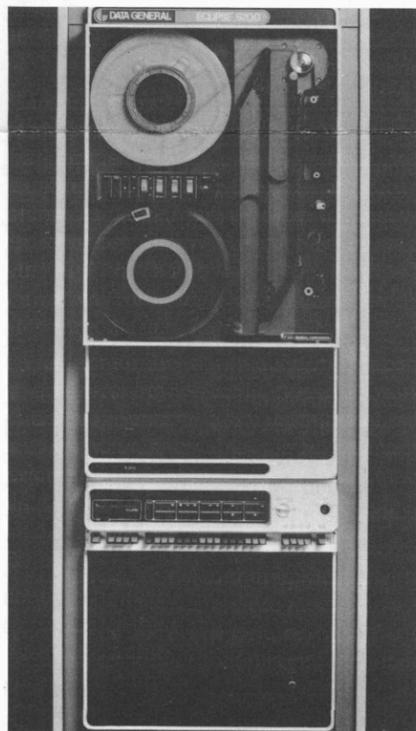
October, 1974 Vol. 1 No. 1

## Worldwide Press Conferences Held Today

For the first time in Data General history, a new computer line, ECLIPSE™, is being introduced to the press and security analysts at simultaneous worldwide introductions being held today in New York, London and Australia.

Each conference includes a slide presentation illustrating the ECLIPSE computer and showing its features. Following this, there is a question and answer period with various marketing, managerial and engineering personnel on hand to field questions. There are also a variety of press kits available containing general news releases, feature and market application releases and photos.

The New York introduction at the Four Seasons Restaurant introduces ECLIPSE to the United States and Canadian press. Over 60 trade press



**ECLIPSE equipment will be operational at the New York City and London press conferences.**

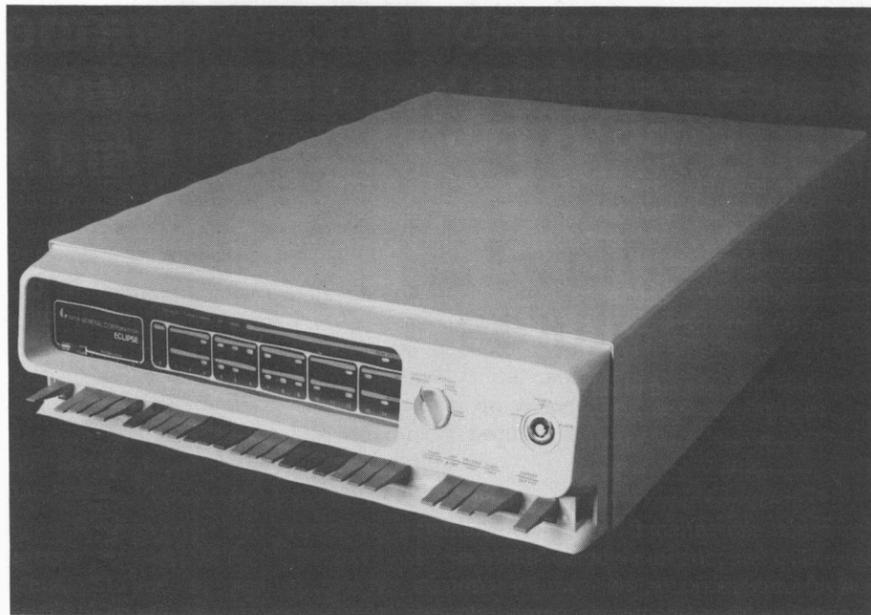
and business editors are attending the morning conference, and over 100 security analysts will be at the afternoon briefing.

In addition to the slide presentation being given by Herb Richman, vice president of marketing, an ECLIPSE computer is at the conference.

Barry Fidelman, vice president of Europe, is conducting the London conference which introduces ECLIPSE to the European trade and business press. Country managers are also attending the introduction and ECLIPSE computer equipment is also operational in London.

Wayne Fitzsimmons, Australia general manager, is presiding over the ECLIPSE introduction being held in Melbourne.

In addition to the three major introductions, press releases were sent to several hundred trade and business periodicals and over 1,700 security analysts in the United States.



**The front console of Data General's new ECLIPSE computer.**

## People Behind The Scenes Who Made ECLIPSE Happen

In a project as large and complex as developing the ECLIPSE computers, many people are responsible for the overall team effort that puts the pieces together and makes it all happen.

The design and development of ECLIPSE was the largest project of its kind ever undertaken by Data General. It involved people in many areas of the company working together and supporting one another in order to achieve the end result.

In this and upcoming issues, *Interface* will highlight some of the people and activities that were responsible for ultimately bringing the ECLIPSE computer to the marketplace.

The first issue will begin to focus on . . .

### The Hardware Development Team

Ron Gruner, project leader for ECLIPSE, backtracked over the last two years to give an overview of how the computer was developed.

Ron explained that a project of this nature goes through three stages: design, debugging and then the transition into manufacturing. Design is a critical consideration, because it involves using the technological informa-

tion, processes and theories of today and forecasting them accurately into tomorrow's computer.

In configuring the ECLIPSE computers, the hardware design team had one crucial prerequisite; it had to be upward compatible with existing NOVA® computers. Data General has a large customer base, and it is important to build new units that will run NOVA computer programs and that will provide an easy transition for our users.

In setting design specifications, a major task is research—researching the current state-of-the-art, various technical and computer magazines, text books, and information on parts and their availability. Also taken into consideration, are cost, performance and feature relationships.

Once the research is done, the next step is implementation; structuring the technology and setting the goals. Input from many different areas of the company, such as engineering, management, marketing, software development and manufacturing are needed to crystalize the concept of exactly what form the computer will take.

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**The Hardware Design Team: (L-R) Al Lyons, Ron Gruner, Bill Churchill, Tom West, Carl Alsing, Jack Carroll and Bruce Loughlin, seated.**

## Data General Unveils New Product Line

Today marks the introduction of Data General's new ECLIPSE computer line. Characterizing the ECLIPSE line are the high-performance and user-oriented features customarily found in much larger computers.

No other compact, general-purpose computer combines ECLIPSE's broad features and power and makes them so accessible through hardware design, powerful operating systems and high-level languages.

### Two Models

The first models of the ECLIPSE line are the \$100 and the \$200. Both are built around a microprogrammed central processor that delivers high-speed throughput and can use either core or semiconductor memories, or a combination of both.

Attractive to users, is the error checking and correcting feature (ERCC) that can find and correct single bit memory errors in core and semiconductor memories. The semiconductor memories incorporate a high-speed cache, the first in any small or medium-scale computer, which increases memory speed while using proven reliable components.

The ECLIPSE \$100 can be equipped with seven printed circuit boards and 32K bytes of core memory and 32K bytes of semiconductor memory. It is slated for use by original equipment manufacturers (OEMs) as part of products they sell, or by users who need a smaller computer system to meet their requirements.

The ECLIPSE \$200, with 16 printed circuit boards, 32K bytes of core memory and 32K bytes of semiconductor memory, is a systems-oriented computer. It will be used by system builders or end users for large scale computing systems.

### Upward Compatible

Both ECLIPSE computers use microprogramming, rather than circuitry, to execute the machine instruction set. Although ECLIPSE computers have

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## To All Employees

Today, we are marking three significant events of benefit to the corporation and its employees. We are introducing an entirely new product line that will exert a major influence on the company's future growth. We are publishing for the first time a monthly newspaper for all employees, and we are starting a new fiscal year. The building blocks for success in this new year will be the hard work, dedication and enthusiasm that characterizes Data General employees. Every year, our company records major milestones in its history made possible through your individual contributions.

Thank you,  
Edson D. de Castro President



The ECLIPSE computer is featured here in a typical systems environment.

## ECLIPSE Computers Offer Customers Extensive Features

(continued)

over 60 new instructions and are more powerful than NOVA computers, programs written on NOVA computers will run on the ECLIPSE \$100 or \$200 with no or minimal changes.

"Upward compatibility," stresses Ed de Castro, Data General president, "was a primary design goal in making the ECLIPSE computers. We have a long standing commitment to design our new computers in a way that permits our customers to run their existing programs on new computers with a minimum of program conversion."

With its clean lines and sculptured appearance, ECLIPSE computers are equally sophisticated in the features they offer to customers.

### Error Checking and Correcting

The error checking and correcting (ERCC) memories use a word 21 bits long; five bits longer than the ECLIPSE and NOVA computers' data word. Logic in the central processor and memories use the extra five bits to make an arithmetic computation to check accuracy on the other 16 bits. The computation is made when data enters the memory and again when it leaves the memory. The results of the two calculations are compared, and if they are identical, the data is used. If they are not identical, the error is located and corrected. The user may keep a log of where the error occurred.

### Cache

The cache feature of ECLIPSE's semiconductor memories gives customers high speed in transferring information from the main memory to the central processor. Cache accomplishes this transfer in 200 nanoseconds by using bipolar memory. The bipolar memory is located on every semiconductor memory board and is arranged in blocks of four with four words each.

As the central processor runs a program, it checks for data in both the main memory and cache. If it is in cache, the data moves to the central processor in 200 nanoseconds. If it is in the main memory, the data goes to the central processor in 700 nanoseconds, and the main memory loads the cache with the location requested and the next three memory locations.

This speeds processing because computers tend to run in sequence, and there is a high probability that the next location needed will be one that numerically follows the initial request. Because it is loaded in the cache, it will be transferred to the central

processor in 200 nanoseconds. Information in the cache is continually updated, and data least likely to be used is discarded.

### Interleaving

Semiconductor and core memory interleaving is another feature that gives ECLIPSE computers fast data throughput. Usually, memory sequential addresses are stored on the same memory board. In interleaving, memory locations that are sequential are stored on different memory modules. ECLIPSE computers can operate several memory modules simultaneously, and because sequential memory addresses are on different boards, it can receive data from one location while accessing another location at the same time.

Data throughput is proportionately increased because core memories can be interleaved up to eight ways and semiconductor memories up to four ways.

### Writeable Control Store

The ECLIPSE central processor is available with a Writeable Control Store that will enable customers to tailor the computer to their individual applications. The Writeable Control Store gives ECLIPSE users up to 256, fifty-six bit words of memory for specialized microprogrammed instructions.

The ECLIPSE computers' instruction set is designed to help programmers writing in assembly language or high-level language programs. Hardware memory stacks, supported by comprehensive instructions, make programming more efficient, while block, word, byte and bit manipulation instructions improve system performance.

### Floating Point Processor

ECLIPSE computers are also available with one of the fastest floating point processors available with any small computer. The floating processor operates in parallel with the central processor and allows the user to enter decimal numbers without regard to how many numbers appear after the decimal point.

### Other Features

Other ECLIPSE computer features include: improved brownout performance—ECLIPSE computers can operate with a 20 percent reduction in line voltage; hardware programming debugging aids on the console; vectored interrupts; and a versatile memory allocation and protection unit that permits hardware protected dual operations, and supports up to 256K bytes of core or semiconductor memory.

## Southboro Sales Meetings Brief Field Organization

During the past two weeks, separate briefings were held on the ECLIPSE computer for the domestic and international sales force. Convening in Southboro for the product and marketing briefings were representatives from each of the regions, plus Ian Wade, systems support manager for the UK, and Jon Schmidt, technical director for the Mediterranean area.

The meetings were held to familiarize the sales force with ECLIPSE computers prior to the national press introductions being held simultaneously in New York, London and Australia. Included in the meetings, were product demonstrations, discussions of technical features and marketing strategies.

Additionally, regional representatives were given information packets distributed yesterday at the regional introductions for sales and application engineers. The packets contained product and component photos, press releases and sales promotion materials, including a 32-page product brochure and direct mail and product briefs.

This is the first time Data General's entire sales force has been briefed prior to a major product introduction. The sales briefings in Southboro and in the regions prepared the field organization for the sophisticated ECLIPSE computers and armed them with more sales tools than ever before prior to a national introduction.

## Ad Campaign To Start October 3

Data General will introduce the ECLIPSE computer line starting October 3 with a black and white ad in *The Wall Street Journal*.

The headline for the new ad campaign in trade magazines begins: "Introducing ECLIPSE. Suddenly a lot of computers don't look so bright." Two-page color ads will run in trade magazines beginning October 14 in *Electronic News*. Other trade publications chosen to run ECLIPSE advertising include *Computerworld*, *Electronics* and *Data-mation*.

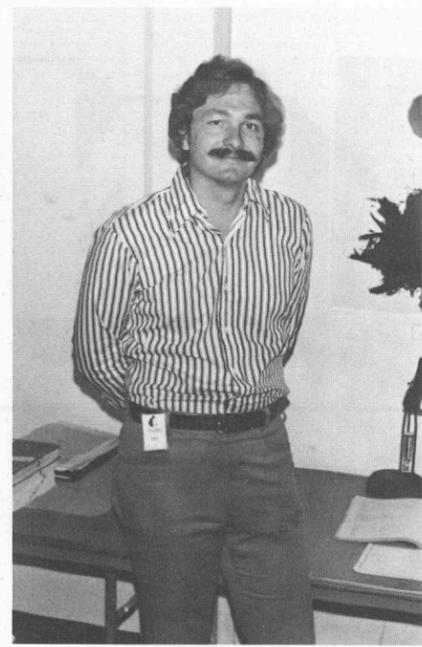
## About Interface

*Interface* will be a regular monthly publication for the employees of Data General Corporation. It will inform you about people with whom you work, various departments and what they do and it will highlight company activities and operations worldwide so you'll better understand your company and what it's doing.

*Interface* will place emphasis on people, because people provide the talent that makes our company a leader in its industry.

In upcoming issues, there will be department features, letters from members of management, company news, product features and a sampling of interesting stories on how the computers you make are used by our customers.

The publication name was chosen because "interface" implies exactly what the paper intends to do... interface with all employees about news of Data General.



Ron Gruner

## People Behind ECLIPSE...

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The hardware design team worked on a variety of special features to give ECLIPSE computers their high-speed performance, flexibility and data integrity.

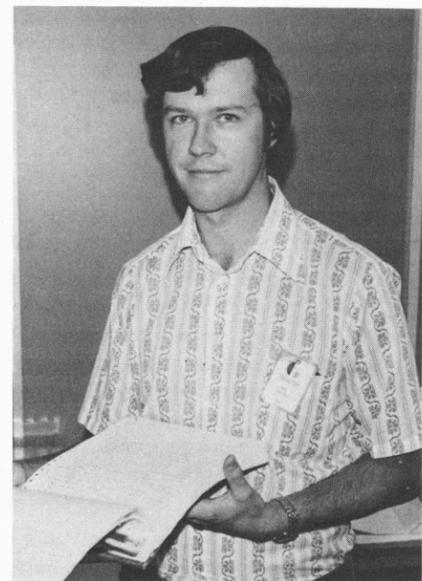
Microprogramming was used in ECLIPSE computers to give them fast execution speed, to allow for over 60 more machine instructions than are used in NOVA computers and to make it easier to program for users.

Microprograms are written in a machine language and are stored in special read only memories (ROM). These memories are permanent and can only be read. ROM's allowed the design team to reduce the circuitry that would otherwise be needed for a machine as powerful as ECLIPSE.

The microinstructions operate the machine's instruction set. Each time the computer is asked to perform a function from its instruction set, several microinstructions, perhaps as many as 40, may be run to accomplish one machine instruction. The microinstructions are executed at extremely rapid speeds and give ECLIPSE fast throughput.

A Writeable Control Store in the microprogrammed control, was designed into ECLIPSE so users could tap this high-speed processing capability. A user can customize an ECLIPSE computer for particular applications through microprogramming. In this way, ECLIPSE will run user programs as though they were normal machine instructions.

Next month, *Interface* will highlight more design aspects of the ECLIPSE computer line.



Carl Alsing

# INTERFACE

Lauri D. Kunis.....Editor

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