

The result of implementing this user interface is a MEDSAFE system which is quite easy to learn and to operate, even for those individuals with no understanding of computers, and no experience as a computer operator. Constructing such a system out of existing software packages (even if such packages existed for all of MEDSAFE's functions) would result in a less satisfactory implementation, as the user interface and 'concept-of-operation' would likely be different for each package.

Storage and Backup: Such a system must provide storage sufficient for thousands of patients, a reliable, simple, and rapid method for creating back-up copies of data, and be able to expand to accommodate future needs.

MEDSAFE is a closely-integrated structure based on a specially-designed microcomputer which provides sophisticated storage capabilities. It has an on-line storage capacity of over 25,000,000 characters, and can back-up or restore this entire data set using a cartridge tape in under ten minutes.

The MEDSAFE storage sub-system consists of one Winchester-type 8"-form-factor disc drive with a 35-megabyte (unformatted) storage capacity, a streaming-type cartridge tape drive, which uses ANSI-standard 1/4" cartridges and has a capacity of 20 megabytes per cartridge, a single controller which operates both storage devices, and a custom-designed host interface which resides inside of the terminal unit.

The backup and restore software is designed so that both patient medical and accounting data is backed-up onto one single tape cartridge. The software, drug data base, and drug interaction records are backed-up onto a separate cartridge. This allows the user to frequently back-up his patient data without having to always take the additional time to back-up the relatively static portions of the system.

The storage sub-system can be readily expanded by the addition of more disc drives. Currently, the maximum number of drives which can be supported is four. In addition, plug-compatible drives which have storage capacities larger than 35 megabytes are becoming available.

Performance rates: Despite having over 30,000 drugs in its data base, it is necessary that response times be short and consistent. MEDSAFE requires a maximum of five to ten seconds to perform a complete drug interaction analysis on a set of several drugs. It can also call-up and display any portion of any patient's medical or accounting record in 1 to 3 seconds. This performance level is achieved through the use of an indexing scheme which minimizes the amount of linear searching required.

Remote Access: In order to service the needs of the physician 'on-call', it is desirable for such a system to provide an economical way for the physician to get access to the data in his system from remote locations, such as the physician's home, or from the emergency room at a local hospital.

MEDSAFE provides remote access to all of its services, to remote sites of the user's own choosing. This is accomplished by means of a remote terminal (a duplicate of the terminal unit in the office) which gives the user 24-hour access to the MEDSAFE system. The system includes the necessary 1200-baud modems and all cabling.

Hard Copy: The system must be capable of producing permanent copies of patient records, drug interaction analyses, and so forth, as well as printing bills and accounting records. MEDSAFE provides a spooled printer function, so that these activities can take place without preventing the system from continuing with other operations while printing is taking place. The widely-used Centronics-type parallel interface is implemented, allowing a wide variety of printers to be employed. A bi-directional dot-matrix printer capable of printing over 100 characters per second is supplied with the system.

Enter last name of patient: Smith
No active patient

Position cursor at desired patient & depress desired function key
No active patient

NEW PATIENT

Smith, Adam, C. 3306 Pacifica Lane, Beverly Hills, CA
Smith, Barbara 411 S. Sperry Road, S.W., Santa Monica, CA
Smith, Beverly 14327 San Pasqual Avenue, San Marino, CA
Smith, Marilyn 16599 11th Street, Los Angeles, CA

Active Patient: Smith, Beverly 14327 San Pasqual Avenue, San Marino, CA
Height: 5'3" Weight: 123 Sex: F DOB: 02/19/61

CURRENT PRESCRIPTIONS:

DRUG CODE	DRUG NAME	STRENGTH	DOSE	TIMES	TOTAL	EXPIRES
000002 0806 02	darvon compound	65 mg	2 TAB	4/day	50 TAB	05/01/82

ALLERGIES AND CHRONIC CONDITIONS:

CODE#	NAME
802	Penicillin

DIAGNOSES:

Code	Name	Date

PROCEDURES:

Code	Title	Date

COMMENTS:

/EDIT

Figure 3. Example Display Screen Sequence.

Canadian Secretariat
The International Society for
Mini and Microcomputers - ISMM
P.O.Box 25, Stn.G
Calgary, Alberta, Canada T3A 2G1
Tel.286-1589
Telex: 038-26670

April 28, 1982

NEIL SIEGEL
PRINCIPAL SCIENTIST
COMPUNET, INC.
11222 LA CIENEGA BLVD. SU. 570
INGLEWOOD, CAL, 90304

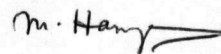
Dear Sir/Madame

It gives me pleasure to inform you that based upon the abstract we have received, your paper:

Paper No.: C1-024
Entitled: Identifying adverse drug interactions: a unified approach to automation in the doctor's office.
By: Dr. N. Siegel (USA)

has been accepted for presentation at the ISMM International Symposium, Mini and Microcomputers and their Applications, MIMI'82 Cambridge, to be held at the Hyatt Regency Hotel, Cambridge, Mass., July 7 to July 9, 1982. Enclosed are special forms for the preparation of your manuscript. Your paper will be reviewed for possible publication in the ISMM 'International Journal of Mini and Microcomputers'. Please supply us with a letter confirming your attendance.

Yours sincerely



M.H. Hamza
Member I.P.C.

P.S.

- 1: All slides and viewgraphs must be easy to read, please take great care in their preparation.
2. Authors must register and papers must be received prior to presentation.
3. Papers not presented at the symposium will not be published.
4. The preliminary program shall be mailed May 15, 1982.

Canadian Secretariat
The International Society for
Mini and Microcomputers - ISMM
P.O.Box 25, Stn.G
Calgary, Alberta, Canada T3A 2G1
Tel.286-1589
Telex: 038-26670

April 23, 1982

NEIL SIEGEL
COMPUNET, 11222 LA CIENEGA BLV
SUITE 570/575
INGLEWOOD, CA 90304
U.S.A.

DEAR SIR/MADAME

It gives me pleasure to inform you that based upon the abstract we
have received, your paper:

Code: P2-004
Entitled: Identifying adverse drug interactions: a unified
approach to automation in the doctor's office
By: Neil Siegel (USA)

has been accepted for presentation at the ISMM International
Symposium, Mini and Microcomputers and their Application, MIMI'82 ,
to be held at the Sheraton Hotel in Paris June 29 to July 2, 1982.
Enclosed are special forms for the preparation of your manuscript.
Your paper will be reviewed for possible publication in the ISMM
'International Journal of Mini and Microcomputers.'
Please supply us with a letter confirming your attendance.

Yours sincerely



M.H.Hamza
Member I.P.C.

P.S.

- 1: All slides and viewgraphs must be easy to read, please take great care in their preparation.
2. Authors must register and papers must be received prior to presentation.
3. Papers not presented at the symposium will not be published.
4. The preliminary program shall be mailed May 15, 1982.

PRELIMINARY PROGRAM

8:00-9:30 REGISTRATION

Twentieth ISMM International Symposium

9:30 WELCOME

9:45 TUTORIAL

Software engineering in microprocessor environments
Fuhrt (USA)

MIMI



Cambridge

10:45 DATA ACQUISITION

Chairman: B. Fuhrt (USA)

Solar radiation data acquisition unit

M.E. Kaye, J.P. Burgess, D.M. Lake

Data acquisition network for inertial instrument test systems
M.E. Ash (USA)

On remote data acquisition and monitoring
M.H. Hamzaoui, J.A. Langlois (CANADA)

8:30 NETWORKS AND DISTRIBUTED PROCESSING

Chairman: G.L. Kelly (USA)

A topology for computer networks and its reliability characteristics and low transmission delays between node computers - G.L. Kelly, F.W. Jiang (USA)

An operating system for a real-time distributed computer network - G.L. Kelly, G. Berthold (USA)

Processing efficiency of a class of automatic operation of an accelerator system - S.D. Pasternik, M.D. Ferraretto (BRAZIL)

Markov and approximate models for multiple bus and multiple bus with partial busses interconnection networks - M. Valero, E. Sanvicente, J.M. Llaberia, J. Labarta (SPAIN), T. Lang

Optimization of double and multiplex structures for local networks - J. Pica, M. Valero, L.A. Yebra (SPAIN)

Performance evaluation of the crossover interconnection networks with fast memories - J. Labarta, M. Valero, E. Sanvicente, J.M. Llaberia (SPAIN), T. Lang (USA)

MINI AND MICROCOMPUTERS AND THEIR APPLICATIONS
Cambridge, Massachusetts, U.S.A.

July 7-9, 1982

SPONSOR

The International Society for Mini and Microcomputers (ISMM)

LOCATION

Hyatt Regency Cambridge, Mass., U.S.A.

INTERNATIONAL PROGRAM COMMITTEE

- A.K. Bejczy (USA) - California Inst. of Technology
- C.S. Chen (USA) - The University of Akron, Ohio
- K.L. Doty (USA) - University of Florida, Gainesville
- B. Fuhrt (USA) - University of Miami, Coral Gables
- M.H. Hamzaoui (CANADA) - The University of Calgary, Canada
- J.L. Houlers (CANADA) - Ecole Polytechnique Montreal, Canada
- P.L. Hsu (USA) - McDonnell Douglas Astronautics Company
- R.A. Kennedy (USA) - Charles S. Draper Lab., Cambridge
- G.K.A. Lee (USA) - Colorado State University, Fort Collins
- D. Moldovan (USA) - University of Southern California
- C.P. Neuman (CANADA) - Carnegie-Mellon University (CANADA)
- J.R. Purvis III (USA) - Texas Instruments Inc., Austin
- M.A. Soderstrand (USA) - University of California, Davis
- Hoc-min Toong (USA) - Mass. Institute of Technology
- L.J. Vroomen (CANADA) - McGill University, Montreal, Canada

parallel Kalman filtering - D. Moldovan (USA)

Microprocessor-based self-tuning regulator - B. Fuhr (USA), S. Stankovic (YUGOSLAVIA)

A fast real-time microprocessor based identification algorithm - R. Doraiswami, M.S. Wood (CANADA)

An efficient algorithm for unmodified ARMA spectral estimation - K. Ogino (USA)

13:45 TUTORIAL

Wide area data gathering systems - J.A. Kleppe (USA)

14:30 APPLICATIONS 3

Chairman: N.M. Schmitt (USA)

A microprocessor based indirect blood pressure instrument based on ultrasound - C.G. Hutchens (USA)

On-line measurement and interpretation of three-axis goniometer diagnostic studies - N. M. Schmitt, R.M. Tafreshi, J. Arnold (USA)

Identifying adverse drug interactions: a unified approach to automation in the doctor's office - N. Siegel (USA)

Direct architectural emulation of systolic organizations - I.R. Greenshields, P.M. Ibsen (USA)

17:00 CLOSING REMARKS

SOCIAL PROGRAM

Tour I

Introduction to Boston

This tour gives the visitor an insight into old Boston from Beacon Hill and the North End to the Prudential Complex and Government Center of the new Boston. Many of the Freedom Trail sites will be covered as the old world charm of the past blends with the exciting architecture of the present.

A stop will be made at the Old

North Church of Paul Revere fame. A short history of the events that led to the Revolution will be heard at the church. This tour will end at Faneuil Hall Marketplace, one of the most exciting restorations in America.

Price: \$10 (min. 30 persons).

Duration: 3 hours, evening July 7.

Tour II

North Shore Dinner Tour

This colourful North Shore area (about 40 miles from Boston) gives the visitor an opportunity to see the rugged rock-bound coastline of New England. The granite quarries here provided the cornerstones of some of Boston's most beautiful buildings.

Rockport, a well known art colony is situated on the streets where Alexander Bell once sold stock in his transatlantic cable. This area is a mecca for those whose tastes vary from paintings to pottery, from delft to dolls.

The galleries of many Cape Ann artists are tucked in among the shacks that once served the fishermen of a by-gone era. The special menu includes clams and hot boiled lobster.

Price: \$30 (min. 30 persons).

Duration: 5 hours, evening, July 8.

HOTEL ACCOMMODATION

Accommodation is available at the Hyatt Regency Cambridge at the special rate of \$78.00 single and \$90.00 double. All rates are plus tax. Early reservation is necessary. Room availability cannot be guaranteed after June 15, 1982. Address: The Hyatt Regency Cambridge, 575 Memorial Drive, Cambridge, Mass. 02139, USA. Telephone: (617) 492-1254. Telex: 921409

SECRETARIAT

The Secretary, MIMI Cambridge, P.O. Box 25, Stn. G., Calgary, Alberta, Canada T3A 2G1. Telephone (403) 270-3616. Telex: 03-826670.