Number 38 FEBRUARY 1973

SIGART NEWSLETTER Number 38 FEBRUARY 1973

A Bimonthly Publication of the
ACM Special Interest Group on Artificial Intelligence

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The Editors encourage contributions from authors, including Letters to the Editor (AI Forum), Technical Contributions (1 to 2 pages), Abstracts (preferably 100-200 words), Book Reviews, Bibliographies of Special Topics in AI, News Items (Conferences, Meetings, Course Announcements, Personals, etc.), advertisements, puzzles, poems, cartoons, etc.

2d

Copy deadline for the April Issue: March 23rd.

2e

To indicate a change of address or if you wish to become a member of SIGART, please complete the form on the bottom of the last page of this hard copy issue.

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CHAIRMAN'S MESSAGE

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Usually at this time of the year I talk about SIGART activities at the SJCC. Obviously, there will be none this year. Hence, I would like to take this opportunity to bring you up to date on the membership statistics. 3a

SIGART currently has 1672 members. At the end of 1971, there were 1241. Thus, in 1972 there was an increase in the membership of 431 or about 35%. SIGPLAN and SIGOPS are the largest SIG'S; both are about twice as large as SIGART. SIGART is the fourth largest SIG with the SIGBDP membership being about half-way between that of SIGART and SIGPLAN. 3b

Of course, quantity does not necessarily indicate quality. But, I feel that the steady increase in our membership is due to two factors. There is a steady increase of computer professionals who are interested in AI, and the members of SIGART feel that they are getting their money's worth. Since the newsletter is SIGART's main activity, I feel that the steady increase in our membership is a real vote of confidence for Steve Coles, Woody Bledsoe, and their predecessors, all of whom have done an excellent job in preparing the newsletters. 3c

Credit is also due to the many members who have sent us news items in the past. I would like to encourage you to continue to send us news items, some of which may be opinions based upon expertise in either AI or some other area. As an example of the latter, the August 1972 newsletter contained a letter by Bobby Caviness about symbolic integration which I found very interesting and informative. I hope there will be more contributions of this sort in the future. 3d

G.W.E. 1/24/73 3e

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EDITOR'S ENTRY

4

1. On-Line Newsletter 4a

In keeping with our philosophy of compiling and editing as much of the Newsletter on-line as we can, Rich and I have begun to enter newsletter material directly in machine-readable form immediately upon receipt from reporters or others. This explains the minor change in paragraph format, etc. in the current issue. We hope the more timely access possible over the Network will more than compensate for lack of direct underlining and subscripting capability in the final published version. Please give us your comments. 4a1

2. Newsletter Reporters 4b

As of this date, the following persons have agreed to act as SIGART Newsletter Reporters at their respective locations: 4b1

	Center	Reporter	4b1a
1.	BBN	Bill Merriam	
2.	Case	Ranan Banerji	
3.	CMU	Don McCracken	
4.	Maryland	Jack Minker	
5.	MIT	Gene Charniak	
6.	NIH	R.C.T. Lee	
7.	SDC	Charles Kellog	
8.	SRI	Rich Fikes	
9.	Stanford	Peggy Karp	
10.	UCSD	Marc Eisenstadt	
11.	USC	Bob Balzer	
12.	Wisconsin	Rob Kling	
13.	Xerox (Palo Alto)	Phil Jackson	4b1b

Since reporters will soon be getting instructions about how to submit material directly over the Network, if you reside in one of the above AI centers, your first point of contact for submitting material should be your local reporter. However, you should still feel free to communicate directly with us, as the occasion demands. Conversely, as your local reporter solicits news or contributions from you, we hope you will cooperate. 4b2

3. Five Year Prediction is Satisfied (Almost)

4c

While your Editor was present at a panel discussion on AI at Noon on August 6, 1966 at Edinburgh University, Scotland, Prof. John McCarthy made the following public prediction: 4c1

> "A robot hand-eye project will screw a nut onto a bolt within five years." 4c1a

In retrospect, such a prediction seemed quite radical at the time. However, in 1969 Prof. McCarthy was observed to be highly optimistic about his five-year predicIion, feeling that five years was actually a conservative estimate. 4c2

According to reliable sources, the feat of "screwing a nut on a bolt" was actually accomplished by Richard Paul for the first time in June 1972 at Stanford. This accomplishment was subsequently documented in July in a recently-released film by the Stanford AI Project.* Well, "5 years plus 10 months" is not exactly "five years," but as far as AI predictions go it still is an outstanding bit of prognostication 4c3

4. AI-Delphi Study

4d

For those who would like to try their "own" hand at forcasting future developments in the field of artificial intelligence (extending to the end of this century), the "AI-Delphi Questionnaire" may be just the thing. As promised in the Editor's Entry last October (Item No. 4), we have designed a three-round Delphi-style questionnaire and cast it around hypothetical products based largely on AI technology. A fourteen-page, first-round questionnaire has already been mailed to approximately 60 respondents chosen for their expertise in AI and drawn largely from the International Joint AI Council (although a number of younger researchers have been added, together with a few vociferously anti-AI types for the sake of balance). The questionnaire, instructions for filling it out, and a cover letter accompanying the mailing have been entered on an NLS file named DELPHI in our SIGART directory on the Network. Please feel free to browse and/or fill out the questionnaire yourself, making comments as indicated.

4d1

4d2

* See p.8 for more details on this film and how to obtain it. 4d2a

5. Cassette Tapes Available of AI Debate 4e

If there is sufficient interest within the AI Community,* we will make available for the price of $4.00 a copy** a ninety minute unedited, casette tape-recording of a recent Colloquium held at Berkeley on the afternoon of January 16 entitled, "A Debate on Artificial Intelligence," moderated by Prof. L.A. Zadeh of the Department of Electrical Engineering and Computer Sciences with the major protagonists being 4e1

1. Prof. Hubert Dreyfus, Department of Philosophy at Berkeley,
2. Prof. Joseph Weizenbaum, Center for Advanced Study in the Behavior Sciences at Stanford, and
3. Dr. Stephen Coles, Stanford Research Institute, 4e1a

and including a lively discussion by participants from an audience numbering almost 400. 4e2

The adversaries adopted predictable lines of argument (for those who are familiar with their public positions), but toward the latter part of the discussion, attention was heavily focused on the social implications of having highly intelligent machines participating in the world of human affairs. Address requests to the Editor, SIGART Newsletter. Do not send money at this time. You will be billed later. 4e3

6. Norman Cousins Plays Chess on the Computer 4f

In the introduction to his book, "The Shape of Automation,"*** Herbert Simon said, 4f1

> "Computers have captured man's imagination. That is to say, like a psychiatrist's ink blot, they serve the imagination as symbols for all that is mysterious, potential, portentous. For when man is faced with ambiguity, with complex shadows he only partly understands, he rejects the ambiguity and reads meaning into the shadows. And when he lacks the knowledge and technical means to find the real meanings of the shadows, he reads into them the meanings in his own heart and mind, uses them to give external shape to his private hopes and fears. So the ambiguous stimulus, the ink blot, becomes a mirror. When man describes it, he depicts not some external reality, but himself." 4f1a

Norman cousins, Editor of WORLD Magazine@, recently played chess with a computer at Dartmouth College. His comments regarding the match@@ are a magnificient illustration of Simon's remarks quoted above. 4f2

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* A minimum of twenty orders will be necessary.

** This price includes the cost of copying the tape, a brand new cassette, and postage.

*** p. ix, Harper and Row, 1965.

@ A newly-formed publication derived largely from the old staff of Saturday Review (before they broke up and transferred their offices from New York to San Francisco and divided the Magazine into four separate concurrent monthlys: Science, Arts, Education, and Society.)

@@ Editorial, "Humans Versus the computer," WORLD, pp.18-19, Feb. 13, 1973.

4g

4g1

"In the course of the evening, I learned a number of things about the chess-playing computer. First of all, it was not invincible. It played correctly but quite routinely. It made no stupid mistakes, such as exposing a major piece to attack by a lesser piece. And it never overlooked a slip you might make, such as foolishly leaving a rook on a diagonal covered by a bishop. Its strategy of victory, in fact, was based on the virtual certainty that, at one point or another, its human opponent would do something foolish. It would translate this advantage into ultimate victory. 4g2

But the machine also had weaknesses. Its play was characterized by very little imagination or daring; in fact, it was a rather dull opponent. Having played it once, you had the advantage in later games of being able to know with considerable certainty what it was going to do. And it was rather inept in dealing with disclosed [discovered] checks, especially when they came in rapid succession. Also, it was reassuring to see that the machine required time to figure out its next move; sometimes it would take three minutes or more to make a decision. 4g3

A visit to what is perhaps the most computer-minded community in the country convinced me that electronic intelligence is neither omniscient or omnipotent. Computers lack imagination and moral insight. The troubled feeling I had in leaving Dartmouth was not that man's inferiority was showing but that his natural superiority was being underworked and undervalued." 4g4

Earlier in the editorial he went into a diatribe about how the "blasted computer mangled thousands of subscriptions" in World Magazine's subscription service system and his "cosmic frustration" about not being able to turn back, since hand-processing of subscriptions was out of the question. A little later he adds, 4g5

> "There is something rather comforting in the demonstrated fact of computer fallibility. We need to preserve the illusion that the human brain is still sovereign. We want to delegate our chores, some of which may be rather sophisticated; but we want neither to be outsmarted nor upstaged. The fact that a computer can be obstinately wrong and even stupid at times gives us not just a friendly feeling about the species but a sense that we are really kin after all. 4g5a

It is a shame that an otherwise reasonable man could so pathetically miss the boat as far as computers are concerned. I would hope that someone in the AI Chess-playing community might write a letter to Mr. cousins setting the record straight. Do we have any volunteers? 4g6

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1/30/73

L.S.C.

4g7

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NEWS FROM THE STANFORD UNIVERSITY AI PROJECT

by
Peggy Karp

5

1. New Movie Available 5a

A new film, entitled "MOTION AND VISION," is divided into three segments, each presenting a research project completed at the Stanford AI Lab during the Summer of 1972. The first segment presents research performed by Richard Paul. The use of a computer-controlled mechanical arm is demonstrated through a series of increasingly difficult tasks, culminating with the locating and screwing of a nut on a bolt, a preliminary task used in a current pump assembly project. 5a1

The second segment presents Aharon Gill's use of visual feedback from a TV camera for self correction in the motion of the mechanical arm during tasks requiring precise manipulation. A toy block placement task is shown. 5a2

The final segment presents Gerald Agon's research using depth information from a laser triangulation system for description of curved and complex objects. A doll and a clay snake are used to demonstrate the processing of laser profiles into segmented volume models. 5a3

The technical level of the film is more advanced than that of earlier films. The material in the first two segments is expanded in the authors' theses, Stanford AI memos 177 and 178, respectively. The film is approximately 25 minutes in duration. It can be borrowed at no cost for a 2-week loan period by contacting Ms. Barbara Barnett, Stanford A.I. Project, Stanford Calif. 94305, (415) 321-2300 ext. 4971 or can be purchased for approximagely $150 from Cine-Chrome Lab, 4075 Transport St., Palo Alto, California. (415) 321-5678. 5a4

2. Charniak Gives Colloquium 5b

Dr. Eugene Charniak of the MIT Artificial Intelligence Laboratory gave a well-attended lecture on the subject of his recent Ph.D. Thesis, "Toward a Model of Children's Story Comprehension" on January 23rd. [Ed.Note: See p.21 this issue for an abstract of Charniak's thesis.] 5b1

COMPUTER TO MODEL NERVOUS SYSTEM OF LOBSTER AT CARNEGIE-MELLON
(As reported in Carnegie Alumni News, Dec. 1972, p.7) 6

Through construction of a computer simulation, scientists hope to find out more about the correlation between the nerve cell structure and function. The project is funded by a $176,200 grant from the National Science Foundation. 6a

Principal investigator for the project at CMU is Dr. D. R. J. Reddy, associate professor of computer science. Working with Dr. Reddy is Dr. W. J. Davis, professor of biology at the University of California at Santa Cruz. 6b

In the study, Professor Reddy will construct a geometrical representation of a lobster ganglion (a set of nerve cells), specifically the ganglion system which operates the lobster's swimmerets, the appendages used for swimming and carrying eggs. 6c

Computer reconstruction is required to make the necessary comparisons and measurements on the neural structures. To do this, a very sophisticated computer system incorporating elements on the frontiers of computer science. It will be capable of constructing a three-dimensional model of a nerve system from photographs of sections, transforming the model into a two-dimensional graphical display with perspective, and permitting manipulation of the graphical image so that it can be studied from any viewpoint, enlarged, or reduced. 6d

Professor Reddy has done extensive work with visual and voice input to computers at Stanford and Carnegie-Mellon. 6e

"Despite some of the sensational stories which have appeared about computers and robots replacing human beings," says Dr. Reddy, "we are a long way from any such possibility. In fact, in recent years we have begun to realize how little we know and how much more work needs to be done before we can even begin to construct computers or robots which might perform any but the most simple functions comparable to the human brain." 6f

Dr. Reddy notes: "In effect we're working with a mini-brain, or a limited neural system. Lobsters have various systems of nerve cells which perform limited functions." 6g

Lobsters are being used for the study because the swimmeret system is one of the best understood small systems of nerve cells, a result of several years of intensive investigation. Dr. Davis has been one of the foremost researchers in these studies. 6h

The study ultimately aims to provide "the most complete functional and structural understanding yet available of the neuronal control of a specific, relatively complex act of overt animal behavior." Techniques developed in the study are expected to be directly usable in the analysis of other invertebrate nervous systems, and ultimately to the analysis of any restricted neural network. 6i

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CHESS

7

"Yes...I Believe that it is possible [in principle] for me to be beaten by a computer ... But they have a long way to go. They're only playing at the class "B" level, which is five or six levels below me. And up to now they've only had computer scientists developing such programs, and they won't get anywhere until they actually involve some good chess players." 7a

Bobby Fisher
World Chess Champion
Dec. 21, 1972
On the Dick Cavett Show
(ABC-TV) 7a1

RESHEVSKY EXONERATED 7b

1. Did the PDP Go Astray?

by
I. Jack Good
December 25, 1972
Dept. of Statistics
Virginia Polytechnic Institute and
State University
Blacksburg, Virginia

7b1

The Third United States Computer Chess Championship was played in August 1972 and was won by Northwestern University's team of Larry Atkin, Keith Gorlen, David Slate, and a CDC 6400, with three straight wins. A commentary by Sam Reshevsky on the best of these three games appeared in the New York Times on August 17, 1972, and was reprinted in the SIGART Newsletter of October 1972. Northwestern had White against Carnegie-Mellon (James Gillogly and a PDP-10). The position after 27 P-KR4 is shown in the diagram on the next page. 7b1a

Here Black played 27...P-QB4?, and Reshevsky says that 27...P-KR3 would have given an even position. This seems undeniable for current chess programs, but it seems to me that White has an objectively won position. He can play 28 N-N2 intending N-B4-R5 ch winning a pawn. I here give two examples of reasonable continuations. 7b1b

A. 28...P-QB4 29 N-B4, B-B3 30 N-R5 ch, K-R1 31 NxP, P-KR4 32 R-K2 (or NxP), PxPch 33 KxP, forced, but wins by the plan P-R5-R6, K-B4, R-N2, P-R7, R-N8 mate. This plan is unanswerable; for example, 33..., B-N2 34 P-R5, P-B3 35 P-R6, R-K2 36 K-B4, R-B2 37 R-N2, R-B1 38 P-R7, B-R1 39 R-N8ch, RxR 40 PxR = R mate. 7b1b1

B. 28... P-KR4 29 P-N5, PxP 30 PxP, BxP (the only chance) 31 PxB, RxPch 32 N-B4, RxP 33 R-N2, K-R3 34 RxR, KxR 35 P-N4 , K-B4 36 P-R4, K-K4 37 P-R5,, K-Q5 38 P-N5 and wins; or here 35...P-R5 36 P-R4, K-B3 37 P-R5, K-K2 38 K-N4 and wins, although the verification of the win requires a little more analysis. 7b1b2

2. PDP Astray (Con't.), December 31, 1972 7b2

Here is the "little more analysis" mentioned at the end of the note of 25th December 1972. 7b2a

38 ... P-Q4 39 P-N5 , BPxNP 40 PxNP, K-Q2 41 PxP, K-B1 42 NxP, K-N1 43 N-K3, K-R2 44 N-B4, KxP 45 KxP and wins. Or 38 ... P-QB4 39 P-N5, K-Q2 40 N-Q5 and wins. 7b2a1

3. [Ed. Note: At this point I wrote a letter to Mr. Reshevsky, enclosing the correspondence in 1 and 2 above and saying, "It is alleged that '27... P-R3' does not yield an even position as you said earlier, and assuming this is true, I don't believe you should be faulted for not realizing that White may still have a winning advantage. After all, it was a position that occurred approximately in the middle of a uniformly poor game (by master standards)."] 7b3

4. Response
by
Samuel Reshevsky
January 16, 1973
5 Hadassah Lane
Spring Valley, New York

7b4

I disagree with Mr. Good's conclusion. Mr. Good has omitted two of Black's best replies to 28. N-N2. First of all, after 28 N-N2 (threatening N-B4-R5) Black can defend the KBP with 28 ... K-B1, and if 29 N-B4-R5, Black continues ...K-K2. Secondly, after 28 N-N2, Black equalizes with 28 ... P-KR4; 29 P-N5, PxP; 30 PxP, P-Q4, etc. 7b4a

P.S. Until you will engage a Grandmaster of high repute, the computer will never get anywhere. 7b4b

5. [Ed. Note: Being unaware of Mr. Reshevshy's response I.J. Good continues the original correspondence.] 7b5

PDP Astray (Con't.), January 16, 1973 7b5a

Grandmaster Robert Byrne has been kind enough to point out that 28 N-N2 can be met by 28 ... K-B1 29 N-B4, R-K1 30 N-R5, K-K2. He points out that now White has a slight advantage but it is doubtful whether he can force a win. The most promising line I have found is 31 P-B5, R-KR1 (to prevent an exchange of the knight for three pawns) 32 R-Q4, with some prospect of exploiting Black's weak pawn structure. 7b5b

Dr. Tan of the School of Artificial Intelligence at Edinburgh points out that after 27 ... P-KR3 28 N-N2, P-KR4 29 P-N5, PxP 30 PxP, P-Q4 at least equalizes. I think White is better off in the variation 29 N-B4, PxPch 30 K-N3 , RxKP 31 N-R5ch, K-B1 or R1 32 NxP, R-K2 33 KxP. Then for example, 33 ... B-B1 34 K-N5, R-K4 35 R-KB2 and White has chances of a win but a thorough analysis would be complicated. 7b5c

6. PDP Astray (Con't.), January 24, 1973 7b6

I now believe Reshevsky was right, in view of the following line 7b6a

27 ... P-KR3 28 N-N2, P-KR4 29 N-B4, PxP ch 30 K-N3 , K-R3 31 R-K2, R-K1 7b6a1

It whould be interesting to know if Reshevsky saw all this or whether he just used judgement. 7b6b

[Ed. Note: This was probably the most carefully analyzed position in the history of computer chess] 7b6c

Final Standing's for the Third United States Computer Chess Championship

7c

	TEAM AND LOCATION OF COMPUTER	RND 1	RND 2	RND 3	POINTS	
1.	Larry Atkin, Keith Gorlen, David Slate; CDC 6400, Northwestern University, Evanston, Ill. CHESS 3.6	W2	W4	W3	3	7c2
2.	George Arnold, Monroe Newborn; Data General Nova, at tournament site. OSTRICH	L1	W7	W6	2*	7c3
3.	Jim Gillogly; PDP-10, Carnegie-Mellon Universty. TECH	W6	W5	L1	2	7c4
4.	Dennis Cooper, Ed Kozdrowicki; UNIVAC 1108, Bell Telephone Laboratoris, Parsippany, N. J. UNIVAC 1108	W6	L1	W5	2	7c5
5.	Fredric Karlson, Charles Kalme, Al Zobirst; IBM 370/155, University of Southern California. USC Chess Program	W8	L3	L4	1	7c6
6.	Franklin Ceruti, Rolf Smith; IBM 360/65, Texas A&M. SCHACH	L3	W8	L2	1	7c7
7.	Mike Rackley, George Moore; IBM 1106, Misissippi State Univ.	L4	L2	D8	1/2	7c8
8.	Bruce Leverett; PDP-10, Harvard University	L5	L6	D7	1/2	7c9

7c1

* Won a three-way playoff for second place. 7c10

Results of Playoff for Second Place 7c11

OSTRICH	TECH	COKO III	points	7c11a

OSTRICH	X	1	1	2	
TECH	0	x	1	1	
COKO III	0	0	x	0	7c11a1

THE FOURTH ANNUAL UNITED STATES COMPUTER CHESS CHAMPIONSHIP 7d

Atlanta, Georgia
August 26-28, 1973 7d1

The ACM will host the Fourth United States Computer Chess Championship at its Annual Conference in Atlanta, Georgia. The tournament is a four round Swiss style tournament with the first two rounds on Sunday, August 26 at 1 P.M. and 7:30 P.M.; the last two rounds will be played Monday August 27 at 7:30 P.M. and Tuesday, August 28 at 7:30 P.M. David Levy, an international Master from Scotland, will return to serve as Tournament Director. A panel discussion involving the authors of the programs will be moderated by Prof. Benjamin Mittman, Director of the Northwestern University Vogelback Computer Center. 7d2

At this time four teams have tentatively entered the competition. The three time champions, Larry Atkin, Keith Gorlen, and David Slate are expected to return and defend their program's title. They have used the CDC 6400 computer at Northwestern for the last three years. Also tentatively entered are the programs of George Arnold and Monty Newborn of Columbia University using a Data General Supernova, Jim Gillogly of Carnegie-Mellon University using a PDP-10 and the team of Dennis Cooper and Ed Kozdrowicko. Cooper is a researcher at Bell Telephone Laboratories and Kozdrowicko is on the faculty of the Electrical Engineering Department at the University of California, Davis. If the number of entries exceeds eight, it will be necessary to qualify for participation. The official tournament rules are indicated on the next page. Entries must be submitted by May 15, 1973. For further information, please contact 7d3

Prof. Monty Newborn
Department of Electrical Engineering
and Computer Science
Columbia University
New York, N.Y. 10027

Telephone: (212) 280-4229 or 3105. 7d3a

[Ed.Note: In a recent telephone conversation with Prof. Newborn I learned that he already has 18 entries, so it looks as though a qualification match may be necessary. He is actively seeking Russian participation for this year's tournament with the only remaining difficulty being the approximately $2500 cost for phone lines between Atlanta and the Soviet Union.] 7d4

TOURNAMENT RULES 7e

1. The tournament is a four round Swiss style tournament with trophies to be awarded to the winner and runner-up. 7e1

2. Games begin 1 PM Sunday, August 26; 7:30 PM, August 26; 7:30 PM, August 27; and 7:30 PM, August 28. A team may ask for a 30 minute delay if it is having technical difficulties. 7e2

3. Unless otherwise specified below, rules of play are identical to those of regular "human" tournament play. If a point is in question, the tournament director has the authority to make the final decision. 7e3

4. Games are played at a speed of 40 moves per player in the first two hours and then 10 moves every 30 minutes thereafter. 7e4

5. The tournament director has the right to adjudicate a game after six hours of total elapsed time. 7e5

6. If a team encounters technical difficulties (machine failure, communications failure or error, or program failure) during the course of a game, the tournament director may allow them to stop their clock for as long as necessary, but not to exceed 20 minutes, in order to restore their system. At the end of the 20 minutes, their clock will be started again. The tournament director may grant a team permission to stop their clock at most three times during the course of a game. 7e6

7. There is no manual adjustment of program parameters during the course of a game. In the case of program failures, program parameters must be reset to their original settings if it is at all possible. Information regarding castling status, en passant status, etc., may be typed in after a failure. If at any time during the progress of a game, the computer asks for the time remaining on either his or his opponent's clock, this information may be provided. However, the computer must initiate the request for information. 7e7

8. At the end of each game, each team is expected to turn in a game listing along with a record of the CPU time required for each move. A record of initial settings on fanout parameters and time control parameters must also be recorded. 7e8

9. The number of participants is limited to 8. (If this number can be increased, then the following is not relevant. However at this time it seems that we will be limited to 8). If there are more than eight teams interested in participating, the decision on who will participate will be made by the tournament director. His decision will be based on information provided to him by the entrant. It is expected that participants who have done well in the past U. S. Computer Chess Championships will not have to qualify. 7e9

10. Each team must include the principal author of the program that they are using. 7e10

11. There are no restrictions on the hardware facilities. 7e11

CONFERENCES

8

ADVANCED STUDY INSTITUTE (ASI)
COMPUTER REPRESENTATION AND MANIPULATION OF CHEMICAL INFORMATION
sponsored by NATO and the CNA

June 4-15, 1973 Noordwijkerhout, Holland

8a

The ASI will be a high level teaching workshop designed for students at the post-doctoral level. The ASI will deal with the broad range of problems and methodologies encountered in the representation and manipulation of various types of chemical information.

8a1

It will include heuristic problem solving in mass spectroscopy by the DENDRAL Project and problems of chemical synthesis by the Princeton Heuristic SECS program. The conference wwll attempt to center discussion on representational issues and non-numerical problem solving.

8a2

Organizing Committee:

8a2a

W. T. Wipke (Princeton)
E. Hyde (ICI)
R. J. Feldmann (DCRT, NIH)
S. R. Heller (DCRT, NIH).

8a2a1

Limited financial assistance will be available for some participants. Application forms may be obtained from Professor W. T. Wipke, Chemistry Department, Princeton University, Princeton, New Jersey 08540 USA.

8a3

1973 SAGAMORE COMPUTER CONFERENCE ON PARALLEL PROCESSING

August 22-24, 1973 Sagamore, New York
(120 miles N.E. of Syracuse, N.Y.)

8b

Authors are invited to submit papers describing recent advances on all aspects of parallel processing, including circuit design, system architecture, reliability and diagnostics, simulation techniques, performance measurements, operating systems, languages, and various application studies. The conference will accept both regular and short papers. The deadline for submission is May 15, 1973. For regular papers a 50-word abstract and a 500-word summary is required. Mail abstracts and/or summaries to

8b1

Prof. T. Feng
Department of Electrical and Computer Engineering
111 Link Hall
Syracuse University
Syracuse, New York 13210

8b1a

1973 IEEE SYSTEMS MAN AND CYBERNETICS CONFERENCE
Sponsored by IEEE Systems Man and Cybernetics Society

November 5-7 Boston, Massachusetts 8c

Papers are solicited on the broad range of disciplinary frontiers that comprise systems science and cybernetics including decision and utility theory, modelling and simulation, man-machine interaction, control theory, pattern recognition, social choice theory, game theory, adaptive and learning systems, etc. 8c1

A major theme of the Conference will be the role of systems analysis in solving societal problems. Papers addressed to the application of system analysis to the analysis, delivery or planning of public services (transportation, medicine, justice, water resources, etc.) are, therefore especially appropriate. 8c2

Two types of papers are being solicited: 8c3

(1) regular papers describing more complete work in greater detail and 8c3a

(2) short papers describing recent and perhaps preliminary work. Prospective authors are asked to submit five copies of complete manuscript for regular papers or five copies of a 700-word summary for short papers, to: 8c3b

Dr. Sheldon Baron
Bolt Beranek and Newman, Inc.
50 Moulton Street
Cambridge, Massachusetts 02138. 8c3b1

Deadline is April 1, 1973 for regular papers, and June 1, 1973 for short papers. Each regular paper will be reviewed for possible presentation at the Conference and for possible publication in the IEEE Transactions on Systems, Man, and Cybernetics. All papers accepted for presentation at the conference will be published in the Conference Proceedings. 8c4

COMPUTER ARTS AT EDINBURGH FESTIVAL 8d

The Scottish Arts council is providing generous financial support for the computer Arts Society to mount an exhibition and live events at the 1973 Edinburgh International Festival. 8d1

Computer composed music, dance, theater, poetry and even robots are planned among the live events during the week beginning 27 August 1973. Artists using computers will give explanations and demonstrations of their work and methods. As a background there will be a display of computer graphics. 8d2

In conjunction with the University of Edinburgh a conference is to be held during the mornings of the same week. Contributions are being invited on the interactions of men, machines, and society, and on computer controlled art works. 8d3

CONFERENCE 8d4

Papers dealing with any aspects of the use of computers in the arts are called for, and particularly ones on the following themes: 8d5

Interaction: man-machine-society
The artist as model maker
Computer controlled systems in music, sculpture, and beyond
Languages for the arts
Procedural composition
What I've done and how I did it
Analytical studies
Analysis and synthesis: Can scholars and artists meet?
Modelling the creative process
Surveys and criticism 8d5a

A summary of 300-500 words is required by 28 February 1973 and the complete paper by 15 June 1973. Copies of these final scripts will be available to all those attending the conference. 8d6

EVENTIBITION 8d7

Live events of all kinds involving the use of computers are invited: music, dance, theater, poetry, robots, and systems of all sorts. Works in graphics, film, recorded sound, or any other passive medium are requested for the exhibition. 8d7a

Demonstrations and explanations of methods and results will also be given by artists as part of the Eventibition. These could be popular versions of conference papers. 8d7b

For information contact: 8d7c

R. John Lansdown
Secretary - Computer Arts Society
50-51 Russell Square
London WCIB 4JX

8d7c1

COURSE ANNOUNCEMENTS FROM THE UNIVERSITY OF WISCONSIN

by

Rob Kling

9

CS731 ARTIFICIAL INTELLIGENCE AND MODELS OF THINKING 9a

Description

9a1

We will study several areas of artificial intelligence, drawn from: 9a1a

Concept Formation
Problem Solving
Theorem Proving
Question Answering Systems
Pattern Recognition and Scene Analysis
Robots
Game Playing
Applications: (Spectrum Analysis, Trust Investment Program Synthesis) 9a1a1

There will be dual attention to A.I. as 9a1b

(1) A design discipline for creating sophisticated tools that require some automated intelligence and 9a1b1

(2) A set of concepts for understanding specific aspects of human thinking. 9a1b2

This course emphasized independent reading, research and writing with mutual help and criticism. 9a1c

Texts: 9a2

Computers and Thought
Problem Solving Methods in Artificial Intelligence
Human Problem Solving
Human Information Processing

9a2a

CS762 DEDUCTION AND PROBLEM SOLVING 9b

Description

9b1

A study of the role of concept formation (planning, analogy, induction, learning) in human and machine problem solving. Selected problem solving languages such as QA4, PLANNER and CONNIVER will be carefully considered. WIS-PLANNER, a local dialect of MICRO-PLANNER is available for experimental use.

9b1a

Texts: 9b2

Understanding Natural Language 9b2a

ABSTRACTS

10

COMPUTER LEARNING FROM ENGLISH TEXT
by
Nagib A. Badre
Memorandum No. ERL-M372
Electronics Research Laboratory
University of California at Berkeley
(Dec. 1972)

10a

This thesis develops a theory and a computer model of learning based on English text. The model is experimentally implemented as a computer program, called CLET (Computer Learning from English Text), which achieves the learning of elementary arithmetic from an ordinary fourth-grade textbook. CLET takes all of its input from unmodified sentences appearing in this book. It performs syntactic, semantic, and discourse level analyses of the input material. CLET must then induce the general algorithms from the examples presented to it. It builds up, automatically, a program to perform the required operations. CLET then solves elementary arithmetic problems using the program it has itself constructed. 10a1

Logic, deductions, and procedural power have been heavily emphasized in previous approaches to computer understanding of natural language. These earlier systems had many shortcomings which prevented them from being able to learn directly from English texts. The hypothesis asserted here is that these difficulties cannot be solved by slightly increasing the sophistication of earlier methods. A more complete linguistic analysis, of the sort carried out in CLET, is required. 10a2

CLET does not attempt to provide a psychological model of a child's learning behavior. On the other hand, its capabilities go far beyond the simple numeric adjustment of a predetermined mode. It emphasizes semantic structure as well as elaborating procedures that analyze coherent discourse. CLET can be said to learn because it "understands" and makes inferences from connected text. 10a3

Learning is one of the most remarkable aspects of human intelligence. By exploring this process on computers, we hope to go one step further in the quest for artificial intelligence. 10a4

TOWARD A MODEL OF CHILDREN'S STORY COMPREHENSION

by
Eugene Charniak

AI TR-266
MIT Ph.D. Thesis
(Dec. 192)

10b

How does a person answer qestions about children's stories? For example, consider "Janet wanted Jack's paints. She looked at the picture he was painting and said, 'Those paints make the picture look funny.'" The question to ask is, "why did Janet say that?"

10b1

We propose a model which answers such questions by relating the story to background real-world knowledge. The model tries to generate and answer important questions about the story as it goes along. Part of the information connected with a "concept" is the set of facts which might be relevant to stories which include the concept. When the concept occurs in the story these facts are "made available" in the sense that they can be used to make deductions. In general all the necessary information to make a deduction may not be around at the time the fact is made available. Hence, the facts are allowed to wait around "looking" for the necessary information. For this reason the facts are called "demons." This model also sheds light on some problems of reference and disambiguation (such as "funny" as "bad" in the above example). The demons (serving as "context") can assign a particular meaning to a word, or a particular referent to a noun phrase.

10b2

A major problem is formalizing real-world knowledge to fit into the comprehension model, and we explore in detail one small topic (piggy banks). Note that it is the researcher, not the model, who discovers and organizes the facts. That is, the model does not learn.

10b3

An earlier version of the model described in the thesis was computer implemented and handles two story fragments (about 100 sentences). The problems involved in going from natural language to internal representation were not considered, so the program does not accept English, but an input language similar to the internal representaion is used. Naturally, this is only a first attempt at a model for children's stories, and many suggestions for further work are included.

10b4

NATURAL LANGUAGE INQUIRY SYSTEMS
by
Stan Mark Rifkin
Computer Science Master'S Thesis
UCLA (1972)

10c

Natural language inquiry systems are those computer programs which allow manipulaton of large data bases by users in a time-sharing mode. The user communicates his storage and retrieval requirements in English. Nine systems are each individually surveyed system-by-system in order to give the reader some background in the diverse design philosophies represented. The systems are then reviewed feature-by-feature with respect to the following common features: 10c1

1) power of the input language 10c1a

2) treatment of syntactically and semantically ambiguous queries 10c1b

3) ease and effectiveness of input language extensibility 10c1c

4) representation of the underlying meaning and facts; and 10c1d

5) the extent of attention to data base management and file organization issues. 10c1e

The result is a list of features which appear to run through all the systems.

10c2

FUZZY PLANNER: COMPUTING
UNCERTAINTY IN A PROCEDURAL
PROBLEM-SOLVING LANGUAGE
by
Rob Kling
Tech Report No. 168
Computer Sciences Department
University of Wisconsin at Madison

10d

Most contemporary deductive problem-solving paradigms deal with a world in which assertions are true (false) and action-rules valid (invalid). This simplified situation is inadequate for realistic applications which include uncertain or inexact information. This paper describes a precise computationally specific method for coupling a particular many-valued logic with a procedural problem-solving system (PLANNER). Solutions to deductive problems can be found which meet specific criteria of reliability. This particular scheme enables the system to dynamically compute the truth-value of a subgoal during the search process. Thus, the reliability of a subgoal may be used to direct the heuristic search procedure. 10d1

POLYFACT: A LEARNING PROGRAM THAT FACTORS MULTIVARIABLE POLYNOMIALS

by
Billy G. Claybrook
Virginia Polytechnic Institute
and State University
Blacksburg, Virginia

10e

POLYFACT, a learning program that determines the symbolic factorization of multivariable polynomials is described. Learning is implemented thorugh the dynamic modificaton of heuristics. This implementation requires a new representation that permits the dynamic modification and creation of heuristics. A slightly modified first-order predicate calculus notation is utilized. The research considers two types of learning schemes: concept learning and generalized learning. 10e1

Tests are developed to evaluate the performance of POLYFACT in accomplishing the following objectives with respect to learning: 10e2

1. demonstrate that learning can be used successfully in a complex environment to increase the efficiency of the program, 10e2a

2. show that a classification scheme can be used to allow POLYFACT to extend itself to newly classified polynomials, and 10e2b

3. demonstrate that a classification scheme can be used as a mechanism for implementing localized learning. 10e2c

About 85% of the over 300 polynomials factored in the performance tests are generated by a random polynomial generator. The random polynomials have coefficients [-10000, 10000], number of variables [2,5], degree of the variables [0,12], and number of terms [2,84]. 10e3

An analysis of variance experiment provides an indication of the significant sources of variation influencing the factorization time. The degree of the polynomial is found to contribute very little to the factorization time.

10e4

PROGRESS IN PICTURE PROCESSING: 1969-71 *

by
Azriel Rosenfeld

TR-176 University of Maryland
College Park, Maryland
(January 1972)

10f

Developments in the field of picture processing by computer during 1969-71 are surveyed. The topics covered and surveyed include picture compression, image enhancement, pictorial pattern recognition, scene analysis, and picture grammars.

10f1

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* See footnote p. 26

10g

REPRESENTATICNS OF THE *
LANGUAGE RECOGNITION PROBLEM
FOR A THEOREM PROVER

by

Jack Minker
Gordon J. Vanderbrug
TR-199, University of Maryland
College Park, Maryland
(September 1972)

10h

Two representations of the language recognition problem for a theorem prover in first-order logic are presented and contrasted. One of the representations is based on the familiar method of generating sentential forms of the language, and the other is based on the Cocke parsing algorithm. 10h1

An augmented theorem-prover is described which permits recognition of recursive languages. The state-transformation method developed by Cordell Green to construct problem solutions in resolution-based systems can be used to obtain the parse tree. In particular, the end-order traversal of the parse tree is derived in one of the representations. The paper defines an inference system, termed the cycle inference system, which makes it possible for the theorem prover to model the method on which the representation is based. The general applicability of the cycle inference system to state-space problems is discussed. Given an unsatisfiable set S, where each clause has at most one positive literal, it is shown that there exists an input proof. The clauses for the two representations satisfy these conditions, as do many state-space problems. 10h2

A HEURISTIC SOLUTION TO *
THE TANGRAM PUZZLE

by

E.S. Deutsch,
and Kenneth C. Hayes
TR-177, University of Maryland
College Park, Maryland
(January 1972)

10i

A heuristic program leading to the solution of tangram puzzles is described. The program extracts puzzle pieces using a set of rules which search for piece-defining edges. The rules decrease in their rigor, and hence in their reliability, in the sense that the edge requirements become more lax. Such edges include those constructed during the solution process. Composites of puzzles are also formed and are treated like puzzle pieces. The solution procedure is such that the most reliable rules are applied recursively as often as possible. It is only when the solution process comes to a halt that the lower reliability rules are applied in order for the process to continue. Sometimes it is necessary to commence with one of the weaker rules after which a return to the more reliable rules is made. 10i1

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* See footnote p. 26

10j

THE MARYLAND REFUTATION PROOF * PROCEDURE SYSTEM (MRPPS)

by

Jack Minker

D. H. Fishman and J. R. McSkimin

TR72-208, Computer Science Center

University of Maryland

College Park, Maryland

(December 1972)

10k

The Maryland Refutation Proof Procedure System (MRPPS) is an interactive experimental system intended for studying deductive search methods. Although the work is oriented towards question answering, MRPPS provides a general problem solving capability. 10k1

There are three major components within MRPPS. These are: 10k1a

(1) an inference system
(2) a search strategy
(3) a base clause selection strategy. 10k1a1

The "inference system" is based on the resolution principle and performs the logical deductions specified. The user may select from a wide variety of refinements of resolution. Current refinements are: set of support, linear, PI, SL, input, and combinations of the above. Paramodulation and deletion by tautologies and subsumption are also provided with the system. 10k2

The "search strategy" directs the deductions to be made by selecting from clauses already generated those that have the best merit. The merit of a clause is given by 10k3

$$f(n) = w[0]g(n) + w[1]h[1](n) + w[2]h[2](n) + \ldots + w[k]h[k](n).$$ 10k3a

If the user can specify tie-breaking rules for equal values of clause merit, an upper diagonal search results in the sense of Kowalski. The upper diagonal search included in MRPPS generalizes the Kowalski upper-diagonal search to an n-dimensional search. 10k4

The "base clause selection strategy" determines which facts and general axioms to select from the data base. Such a clause may be generated regardless of whether it has the best merit. 10k5

Heuristic techniques are applied within each of the three major components. This technical report describes the current implementation of MRPPS. It describes each of the components and how they are integrated into what has been termed the Q* algorithm. 10k6

MRPPS is written in FORTRAN V for the UNIVAC 1108 (a version of FORTRAN IV) and runs under EXEC 8 at the University of Maryland. The current implementation is core bound and requires approximately 60K words of memory to run, of which 35K is for the data base and for working storage. 10k7

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* See footnote p. 26 10l

OUTLINE, BIBLIOGRAPHY, AND KWIC INDEX ON MECHANICAL THEOREM PROVING AND ITS APPLICATIONS *

by
G.J. VanderBrug,
D.H. Fishman,
and J. Minker
TR-159
University of Maryland
College Park, Maryland (June 1971)

10m

In the last decade much work has been done in both the formalization of theorem proving procedures and the development of theorem proving programs. In addition, the general logical inference capability of a theorem prover has been applied to such areas as: question-answering systems, problem-solving systems, proving theorems in abstract mathematical systems, proving the correctness of programs, writing programs, and robot technology.

10m1

In this paper we outline the significant achievements in mechanical theorem proving applications. These achievements range from foundational work in the 1920's and 1930's to current efforts. A comprehensive bibliography and KWIC index on this subject is then presented.

10m2

10n

*A limited number of University of Maryland reports are available and may be obtained by writing to: 10n1

Mr. Harry Ohan
University of Maryland
Computer Science Center
College Park, Maryland 20742 10n1a

There are also a large number of other reports available in picture processing, pattern recognition, cluster analysis, associative memories, and information storage and retrieval that are also available. Write to Mr. Ohan for a list of all reports available at the University of Maryland. 10n2

VISUAL LEARNING AND RECOGNITION BY COMPUTER

by

Stephen A. Underwood
and C. L. Coates

Technical Report No. 123
April 1972

Information Systems Research Laboratory
The University of Texas At Austin

10o

When a three-dimensional object is visually perceived, it can be described by its shape, the shape of its various surfaces, and how these surfaces are interconnected to form the object. As the object is rotated in space, certain characteristics of the shape of each of the surfaces of the object remain invariant along with the connections between the various surfaces. 10o1

The objective of this study is to formulate an algorithm for forming a description of three-dimensional objects that will be invariant with the objects' position in three-space. The objects are three-dimensional convex objects with planar surfaces and are observed by a television camera system which is interconnected with a digital computer system. 10o2

The computer forms a two-dimensional line drawing description of the object by edge following techniques. The object is rotated in space so that all surfaces of the object are observed and the interconections of all surfaces are determined. The line drawing descripitions of the object are used by the computer to form a complete description of the object which is position invariant. No previous knowledge about the object being observed is supplied to the computer program except that the surfaces of the object are planar. 10o3

After a library of several different objects has been obtained by the computer, any one of these objects may be placed before the television camera in any position. The computer program will recognize and name the object being observed by matching its description to a description stored in the library. 10o4

WHY CONNIVING IS BETTER THAN PLANNING
by
G. J. Sussman & D. V. McDermott
No. 255A MIT Project MAC
(April 1972)

10p

This paper is a critique of a computer programming language, Carl Hewitt's PLANNER, a formalism designed especially to cope with the problems that AI encounters. The contention is that the backtrack control structure that is the backbone of PLANNER is more of a hindrance in the solution of problems than a help. In particular, automatic back-tracking encourages inefficient algorithms, conceals what is happening from the user and misleads him with primitives having powerful names whose power is only superficial. An alternative language, CONNIVER, which avoids these problems, is presented from the point of view of this critique.

10p1

A HETERARCHICAL PROGRAM FOR
RECOGNITION OF POLYHEDRA
by
Yoshiaki Shirai
No. 263 MIT Progect MAC
(June 1972)

10q

Recognition of polyhedra by a heterarchical program is presented. The program is based on the strategy of recognizing objects step by step, at each time making use of the previous results. At each stage, the most obvious and simple assumption is made and the assumption is tested. To find a line segment, a range of search is proposed. Once a line segment is found, more of the line is determined by tracking along it. Whenever a new fact is found, the program tries to reinterpret the scene taking the obtained information into consideration. 10q1

Results of the experiment using an image disector are satisfactory for scenes containing a few blocks and wedges. Some limitations of the present program and proposals for future developments are described. 10q2

EVALUATION AND RESOLUTION
by
A. Bundy
No.55
Department of Computational Logic
School of Artificial Intelligence
Edinburgh University

10r

The Concept of the evaluation of literals is generalized to include the solving of equations. This generalization is shown to be compatible with resolution.

10r1

MACRO-INFERENCE STEPS IN
PROOFS OF PROGRAM CORRECTNESS
by
S. Weir and R. M. Burstall
MIP-R-96
Department of Machine
Intelligence and Perception
School of Artificial
Intelligence
Edinburgh University
(May 1972)

10s

This paper develops the idea of a cooperative, man/machine proof-checker for a system where certain 'obvious' chains of inference are done automatically.

10s1

SCENE ANALYSIS AND PICTURE GRAMMARS
(presented at NPL Conference, April, 1972)
by
M.B. Clowes
Laboratory of Experimental Psychology
University of Sussex

10t

The problems posed in scene analysis have many of the characteristics of those which earlier prompted the 'linguistic approach' to picture processing. This paper considers whether those problems have a meaningful solution within the earlier (linguistic) paradigm and in particular whether 'picture grammar' is a useful vehicle for scene analysis. 10t1

SIGART NEWSLETTER Number 38 FEBRUARY 1973

SEVENTH MACHINE INTELLIGENCE WORKSHOP

by
Pat Hayes
Dept. of Computational Logic
University of Edingurgh

(As Reported in AISB BULLETIN, Nov. 1972)

11

The seventh workshop was, as usual, an interesting and enjoyable occasion. The proceedings will soon be appearing as 'Machine Intelligence 7' (Edinburgh University Press). 11a

Of the 23 papers presented, seven where concerned with various aspects of theorem-proving, two with the theory of computation, two with formal grammatical theory, three with robotics, the rest being harder to classify. Biased and subjective remarks on some papers follow: 11b

Jared Darlington is continuing his methodical work on higher-order theorem-proving. Bob Boyer and J.Moore described their ingenious methods of squeezing lots of logical expressions into moderately sized core stores. This prompted an interesting discussion starting from the observation that the Boyer/Moore method shows strong resemblances to techniques of subroutine linking in LISP and ALGOL interpreters. David Cooper has a very attractive theorem-proving system for the important special case of Presburger arithmetic (i.e., sums without multiplication). 11c

Robin Milner and Richard Weyhrauch gave a beautifully elegant presentation of some equally elegant work in the machine checking proofs of the correctness of a simple (but not TOO simple) compiler. In contrast, Rod Burstall's paper was concerned with extending existing techniques of program proving to programs involving manipulations of complex data structures. There was a general feeling that it is nice to see theory of computation reaching out to realistically difficult programs at last. 11d

A. Rosenfeld gave us another installment in the theory of web grammars. Web grammars seem to me to be an intriguing idea, and I was bold enough to suggest that they seem the appropriate tool to formally analyze certain kinds of modelling used in several vision programs: the general response was apathetic, but Rosenfeld agreed. Herman and Walker gave an interesting application of (more conventional) grammars describing the growth of biological systems. The AI interest comes from the fact that they want to inductively GUESS a grammar, given the evidence. 11e

Robots at SRI (Shakey - a very professional film with color, sound, exotic camera angles, etc.), Edinburgh (how to get a useful hand-eye system using British hardware), and MIT were mentioned. Pat Winston described some recent MIT vision work by a graduate student, Waltz. The program extends the now classical Clowes/Huffman grammatical techniques to include shadows, illumination, and cracks. It is suprisingly successful; why does it work so well? We also heard about other new vision work at MIT, such as a new super line-finder which uses contextual information to guide its guesswork. Interestingly, the MIT group has abandoned further robot hardware development just as the first British robot goes 'live' 11f

Of other papers, Bob Kowalski has an interesting discussion of several general aspects of heuristic search. Stephen Isard and Julian Davies see conversations as reciprocal programming (when I say to you 'open the window' you are the computer and I am the programmer: when you reply 'won't', vice versa). 11g

Deutsch and Hayes described an elegant heuristic program for solving tangram puzzles. (I would like to see a program which could have WRITTEN their program: I think it is only a little outside the current state of the art.) Patrick Krolak is using heuristic programming to organize school bussing, garbage collection (real garbage), etc... It works. Ed Feigenbaum, having licked the chemists with his Dendral program, is now trying to put himself out of work with META-dendral. Peter Buneman and David Willshaw asked, 'What counts as a generalization?', which is (still) a very good question. Pat Winston told us about CONNIVER, which is positively the latest thing in problem-solving languages. There was a very interesting discussion here between Winston, Dan Bobrow, and others on ways of implementing complex control structures. 11h

Richard Gregory gave an interesting illustrated talk on certain visual illusions in which an illusory shape itself causes further illusions; showing, he claimed, that such illusions were due to mistaken information processing rather than simple physiological malfunction. (This conclusion was disputed by Rosenfeld.) John McCarthy observed that one could get the secondary illusion merely by IMAGINING the illusory shape, and we all tried this in unison: it worked for most people. This strengthened Gregory's case. 11i

There were a number of discussions. One fairly acrimonious debate was over the vexed question of defining AI. The definition which seemed to receive most assent was roughly: AI is THE STUDY OF INTELLIGENCE BY COMPUTATIONAL MODELLING. This is to be carefully distinguished from (i) trying to do smart things by programming (engineering) and (ii) studying human/animal behavior by computer modelling (psychology); although of course both of these have very close links with AI. 11j

Towards the end of the workshop, John McCarthy led a discussion of the "where do we go from here" variety. The one central thing we could all agree on was, we need better ways of representing knowledge of all kinds. McCarthy tried to suggest useful extensions to the predicate calculus, but Max Clowes vociferously could not see the relevance of this; and Pat Winston, wearing his official MIT hat, thought that the predicate calculus was a loser to start with, as it wasn't "computational" enough. This caused a lengthy, noisy discussion which finished with McCarthy asserting that predicate calculus seemed like the MINIMAL amount for expressive power one might need. Nobody disagreed with that. Bernard Meltzer announced later that a future special issue of the AI Journal (perhaps late in 1973) might be entirely devoted to the "representation problem". 11k

It remains only to say that the administration and organization of the workshop was up to the usual high standard, perhaps to be faulted only by the impossibility of opening windows in the conference hall 11l

SIGART NEWSLETTER Number 38 FEBRUARY 1973

AI on TV

12

On Monday evening, January 22, ABC aired the first in a scheduled monthly series of half-hour specials dramatizing how today's technological breakthroughs are shaping the future. Entitled "What about tomorrow?", the series seems a close sequel to CBS's "Twenty-First Century" of four years ago. The first show, "On the Side of Man" -- with ABC News Science Editor Jules Bergman -- dealt with the "humanization" of computer technology and reported primarily on the work of scientists at Bell Labs and MIT's Artificial Intelligence Laboratory. Terry Winograd's "block world" shown in action on a graphic display and Seymour Papert's "Turtle" robot in use by children in an educational setting were highlights of the program. Next month's offering will be concerned with the problem of urbanization.

12a

WANTED - VISION HACKER

13

The Stanford Research Institute A.I. Center is implementing an ambitious new perceptual system for a robot. We need an experienced A.I. programmer/researcher (Lisp, Fortran, and Assembly Language) who can translate conceptual ideas into running code. 13a

Send resume to: 13b

Dr. Peter E. Hart
Artificial Intelligence Center
Stanford Research Institute
Menlo Park, California 94025 13b1

14886 Distribution
Coles, L. Stephen , Fikes, Richard E. ,

SIGART NEWSLETTER Number 38 FEBRUARY 1973

(J14886) 5-MAR-73 17:59; Title: Author(s): Kelley, Kirk E. /KIRK;
Distribution: /lsc ref ; Sub-Collections: SRI-ARC; Clerk: KIRK;
Origin: <SIGART>FEBODP.NLS;5, 6-FEB-73 18:36 KIRK ;

KIRK 5-MAR-73 18:16 14887

In the unlikely event that you get any messages through the journal that do not seem to apply to you.

Dear Karen, Your ident has accidently been placed next to my name in one place in the CURRENT DIRECTORY OF ARPA PARTICIPANTS. This is unfortunate as you may recieve journal mail intended for me. Although this is unlikely, there are two things you can do in case this happens. If you receive your mail on-line, you can execute secondary distribution and send any mail you think might be for me to my ident: KIRK. If you are totally off-line, let me know and maybe we can work something out.-- Kirk Kelley (SRI-ARC) 1

KIRK 5-MAR-73 18:16 14887

In the unlikely event that you get any messages through the journal that do not seem to apply to you.

(J14887) 5-MAR-73 18:16; Title: Author(s): Kelley, Kirk E. /KIRK;
Distribution: /kk ; Sub-Collections: SRI-ARC; Clerk: KIRK;

KIRK 5-MAR-73 18:22 14888

COMMENT ON: (FEB73NEWSLETTER,6) by Kirk Kelley

This is a test message about CHESS statement number 6. 1

KIRK 5-MAR-73 18:22 14888

COMMENT ON: (FEB73NEWSLETTER,6) by Kirk Kelley

(J14888) 5-MAR-73 18:22; Title: Author(s): Kelley, Kirk E. /KIRK;
Distribution: /comment ; Sub-Collections: SRI-ARC COMMENT; Clerk: KIRK;

alternative solutions

There are other possibilities: 1

We contribute to their coffers either through 1a

a) increased prices, or 1a1

b) by supporting one-quarter or so of their labor charges via our own project numbers, or 1a2

c) by sending one of our people down their to make coffee on some equitable basis. 1a3

alternative solutions

(J14889) 5-MAR-73 8:43; Title: Author(s): Kudlick, Michael D. /MDK;
Distribution: /dvn ; Sub-Collections: SRI-ARC; Clerk: MDK;
Origin: <KUDLICK>COFFEE.NLS;1, 5-MAR-73 8:35 MDK ;

MFA 5-MAR-73 12:06 14890

DOCUMENTATION CHANGES

please comment

DOCUMENTATION CHANGES

I've made the following changes relevant to user documentation: 1

The folklore branch of the file <nls>status has been moved into the directory userguides (see -- userguides ,folklore,1) 1a

I've already picked up alot of the DNLS documentation contained therein and put it into the online copies of the various sections of the DNLS User Guide. 1a1

When the DNLS User Guide is republished, those entries will be deleted from the folklore file. The same procedure will be used with the TNLS, Journal, and DEX documentation. 1a2

Also, this folklore file is not the one which will be sent to te user community. Users will receive sequential spinoffs from this file. 1a3

There will be a companion file to this which will contain only the changes in the most recent version of the system. This is the file which will be distributed to users via the proposed NLS Newsletter mechanism. 1a3a

I've renamed most of the files in the Userguides directory as follows: (Locator willl be changed to reflect these changes) 1b

DNLS 1b1

(dnls-intro,:xb) 1b1a

(dnls-environment,:xb) 1b1b

(dnls-files,:xb:xb) 1b1c

(dnls-address,:xb) 1b1d

(dnls-viewing,:xb) 1b1e

(dnls-editing,:xb) 1b1f

(dnls-tenex,:xb) 1b1g

(dnls-summary,:xb) 1b1h

TNLS 1b2

(tnls-beginners,:xb) old loc10814 1b2a

(TNLS-contents,:xb) old loco7470 1b2b

(TNLS-tenex,:xb) old loc7471 1b2c

(TNLS-files,:xb) old loc7472 1b2d

(TNLS-address,:xb) old loc7473 1b2e

(TNLS-text,:xb) old loc7474 1b2f

(TNLS-editing,:xb) old loc7475 1b2g

(TNLS-charcodes,:xb) old loc7476 1b2h

(TNLS-directives,:xb) old loc7477 1b2i

(TNLS-errormessages,:xb) old loc7478 1b2j

(TNLS-commandsum,:xb) old loc7479 1b2k

(TNLS-glossary,:xb) old loc7480 1b2l

(TNLS-index,:xb) old loc7481 1b2m

JOURNAL 1b3

(JOURNAL-contents,:xb) old loc7635 1b3a

(JOURNAL-intro,:xb) old loc7636 1b3b

(JOURNAL-journal,:xb) old loc7637 1b3c

(JOURNAL-idents,:xb) old loc7638 -- missing 1b3d

(JOURNAL-numbers,:xb) old loc7639 1b3e

(JOURNAL-summary,:xb) old loc7640 1b3f

(JOURNAL-index,:xb) old loc7644 1b3g

L10 1b4

(l10-l10,:xb) old loc9246 1b4a

DEX 1b5

I've started building a master index to all files in the userguides directory (see -- userguides,master,1) 1c

DOCUMENTATION CHANGES

The table of contents to the TNLS Beginner's Guide is being fixed (by Kirk) and will be republished ASAP. 1d

All of the files in the userguides will be changed to contain as many named statements as possible and appropriate to facilitate online usage through mnemonic addressing. 1e

DOCUMENTATION CHANGES

(J14890) 5-MAR-73 12:06; Title: Author(s): Auerbach, Marilyn F. /MFA ; Distribution: /sri-arc ; Sub-Collections: SRI-ARC; Clerk: MFA ;

PROPOSED GUIDELINES FOR A TNLS PRIMER

INTRODUCTION 1

The following are my ideas on the basic content for the proposed TNLS primer. There are three categories: key concepts, goals (or what the user should be able to do after using the primer), and the TENEX and TNLS commands and control characters to be covered. 1a

I see the need for structuring the Primer in two basic oarts. The first is a narrative which is designed to be read only from beginning to end with no contact with the system. The second part is a series of terminal sessions which in cookbook fashion take the reader through online demonstration and work exercises. 1b

The order of items presented here is by no means the final ordering I envison for the Primer. The flow of the primer, in writing, will dictate the organization of information. I intend to use the model of a writer (such as myself) and use that analogy throughout the narrative. 1c

KEY CONCEPTS 2

file (filename) 2a

directory 2b

initial file 2c

partial copy 2d

statement 2e

addressing - the CM 2f

- statement numbers 2f1
- SIDs 2f2
- content 2f3
- branch 0 (a means of referencing the whole file) 2f4

view modification - viewspecs 2g

links - embedded in text only 2h

formattting hardcopy 2i

journal 2j

online resource query 2k

GOALS - after reading/practicising with the Primer, the user should be able to: 3

get help 3a

log in and out of TENEX and nls 3b

create an NLS file 3c

no structure 3c1

edit an nls file 3d

by statement, character, word, text manipulation) 3d1

address/move around in a file 3e

by statement numbers, SIDs, content search, ">","←",predecessor, successor, "LF", "↑", and by using viewspecs mn, ts, IJ 3e1

format for printing (local) 3f

viewspecs, execute viewchange print commands 3f1

print 3g

stop printing 3h

maintain his directory 3i

submit Journal items 3j

deferred numbers only and using interrogate 3j1

find IDENTs of other users 3k

.lastname in Journal 3k1

read Journal items send to him 3l

query NIC resources online 3m

query language 3m1

PROPOSED GUIDELINES FOR A TNLS PRIMER

(J14891) 5-MAR-73 14:28; Title: Author(s): Auerbach, Marilyn F. /MFA; Distribution: /dirt rww ; Sub-Collections: SRI-ARC DIRT; Clerk: MFA;
Origin: <USERGUIDES>PRIMER.NLS;8, 2-MAR-73 11:48 RWW ;

NJN 5-MAR-73 6:42 14892

Ames-tip phone lines

Wayne-- I just got another message from an Ames-tip user who claims that the problem with the carrier line going away at 2 A.M. still exists. He also claims that it has nothing to do with the amount of time that he has been on the line. Could you please check into this again and let me know the results? Thanks very much --Nancy Neigus (BBN)

The message was from Larry Masinter: (IJOURNAL, 14862, 1:w) 1

14892 Distribution
Hathaway, A. Wayne ,

NJN 5-MAR-73 6:42 14892

Ames-tip phone lines

(J14892) 5-MAR-73 6:42; Title: Author(s): Neigus, Nancy J. /NJN;
Distribution: /AWH; Sub-Collections: NIC; Clerk: NJN;

NJN 5-MAR-73 7:02 14893

a necessary pause

Dave-- Things have really been hopping here, with everybody on our backs to get the network fixed. A couple of other things have come up too, and I'm afraid I won't be able to work on Netref for a while. This has already been true for a few days. I'll try to get back to it as soon as I can. --Nancy 1

a necessary pause

(J14893) 5-MAR-73 7:02; Title: Author(s): Neigus, Nancy J. /NJN;
Distribution: /DHC; Sub-Collections: NIC; Clerk: NJN;

<ILLINOIS>WJB.NLS;3, 4-MAR-73 18:13 WJB ; 1

IRA: 1a

WE HERE AT ILLINOIS WOULD LIKE TO HOST THE NEXT GRAPHICS WORKING GROUP CONFERENCE PROBABLY SOMETIME IN THE LATER PART OF APRIL. WE HAVE HAD GREAT SUCCESS IMPLEMENTING A NUMBER OF THINGS USING THE NGP LEVEL 0 PROTOCOL FOR OUTPUT TO THE GOULD 4800, COMPUTEC STROAGE DISPLAYS, AND THE IMLAC DISPLAY SYSTEM. 1b

WE HAVE REACHED A NUMBER OF TENTATIVE EVALUATIONS ABOUT THE CURRENT PROTOCOL AND ITS EXTENSIONS AND FEEL QUITE STRONGLY ABOUT HAVING ANOTHER MEETING OF THE GRAPHICS GROUP TO IMPROVE AND EXTEND THE PROTOCOL, BOTH FOR OUTPUT AND FOR INPUT. 1c

SEND ME A NOTE HERE AT NIC WHEN YOU CAN. 1d

WJB 3/4/73 U OF I 1e

(J14894) 4-MAR-73 18:22; Title: Author(s): Bouknight, W. Jack /WJB;
Distribution: /IWC; Sub-Collections: NIC; Obsoletes Document(s): ;
Clerk: WJB;

MEH 15-MAR-73 11:42 14896

CURRENT ARC PROJECT AND OVERHEAD SUBNUMBERS, UPDATE TO PROJECT 1868 OPERATIONS ACCOUNTING CODES

REF: (11824,)

The following account code has been added to ARC's operations subfield.

107, CSO HARDWARE ON-LINE REPAIRS

This code will be used by Hardware and Software personnel when doing on-line Hardware troubleshooting and repairs.

14896 Distribution

Van De Riet, Edwin K. , Van Nouhuys, Dirk H. , Victor, Kenneth E. (Ken) , Wallace, Donald C. (Smokey) , Watson, Richard W. , Andrews, Don I. ,
Keeney, Marcia Lynn , Hoffman, Carol B. , Lee, Susan R. , Michael, Elizabeth K. , Dornbush, Charles F. , ARC, Guest O. , Feinler, Elizabeth J. (Jake) , Handbook, Augmentation Research , Kelley, Kirk E. , Meyer, N. Dean , Byrd, Kay F. , Prather, Ralph , White, James E. (Jim) , Vallee, Jacques F. , Kaye, Diane S. , Rech, Paul , Kudlick, Michael D. , Ferguson, Ferg R. , Lane, Linda L. , Auerbach, Marilyn F. , Bass, Walt , Engelbart, Douglas C. , Hardeman, Beauregard A. , Hardy, Martin E. , Hopper, J. D. , Irby, Charles H. , Jernigan, Mil E. , Lehtman, Harvey G. , North, Jeanne B. , Norton, James C. , Paxton, William H. , Peters, Jeffrey C. , Ratliff, Jake

LINKS OLD AND NEW, A SUGGESTION ON HOW TO MAKE IT EASIER TO FIND THEM

It would be extremely nice to have an on-line index file of links. This file, or files, could provide an easy way to locate new links to previously journalized documents. The implementation of this concept appears inexpensive, especially in relationship to what we would get in return. 1

WHAT IS NEEDED: 1a

1. A mechanism for submitting links. 1a1

   - new submit journal field; (LINKS: .....)? 1a1a

2. A collection file for the submitted links. 1a2

   - on-line link file; (documentation,links,)? 1a2a

3. An addition to the journal delivery process. 1a3

   - away to take the submitted document number, its links if any, and append them to (documentation,links,) in the form of a statement? 1a3a

   Note: a more sophisticated way of course would be to have the journal process itself automatically search the submitted file for links and then append (documentation,links,), thus eliminating the user submit process; Item 1. above. 1a3b

ADVANTAGES: 1b

2. Would provide a link index file containing both the old and the new Links. 1b1

1. One could use a simple content analyzer pattern, ["(Jnumber,)"], to filter (documentation,links,) and locate all the submitted links to that document. Then assimilate to copy, for recording or publication. 1b2

3. One could easily add links by submitting the new Link/s for appendage to (documentation,Links,). 1b3

4. This file, or files, would form a web of links independent of the documents. 1b4

   (ie: not requiring the documents to be on line) 1b4a

5. Would provide a quick and easy way to locate links. 1b5

One could easily find such things as: 1b5a

- new or partial updates to User Manuals 1b5a1

- the latest journalized status or query pertaining to some previous journal item 1b5a2

  (ie: latest update to a team statement of responsibilities, work schedule, time estimates, etc) 1b5a2a

- ETC,etc, .. 1b5a3

6. Could easily be adapted to a better system when one came along. 1b6

14897 Distribution
Irby, Charles H. , Norton, James C. , Watson, Richard W. , Irby, Charles H. , Hopper, J. D. ,

MEH 9-MAR-73 16:38 14897

LINKS OLD AND NEW, A SUGGESTION ON HOW TO MAKE IT EASIER TO FIND THEM

(J14897) 9-MAR-73 16:38; Title: Author(s): Hardy, Martin E. /MEH ;
Distribution: /np jcn rww chi jdh ; Sub-Collections: SRI-ARC NP;
Clerk: MEH;

IMLAC, Adding a mouse and keyset.

From recent discussions (3/13) with Imlac Corp and Cybernex. It has been concluded that any Imlacs can easly be modified to include a mouse and keyset. Essentially all that is necessary is a "bare bones" unit. (Writing of the mouse is done through short vectors, which is a basic part of the bare bones.) 1

Imlac Corp will supply a kit containing all necessary cards (2ea), sockets, and cabling complete with wiring lists and installation instructions. The kit can be installed by the customer's service technician at the customer's location. 2

Cost = see (note) below. 2a

Cybernex also supplies a mouse and keyset kit with instructions for field installations. 3

Cost = Normally a minimum order of 2, but in particular circumstances will supply kits in single quanities. 3a

(note)

1. Rought single unit kit cost queried from both suppliers was less than $2,000.
2. The kit is easier to install in lower serial number models because of more free cabinet space. 4

MEH 13-MAR-73 12:31 14898

IMLAC, Adding a mouse and keyset.

(J14898) 13-MAR-73 12:31; Title: Author(s): Hardy, Martin E. /MEH ;
Distribution: /emc chi dcw kev ; Sub-Collections: SRI-ARC EMC;
Clerk: MEH;

MEH 29-MAR-73 11:18 14900

SUMMARY OF TASKER PROBLEMS, progress report 1

REFERENCES: (13592,) (13584,) (13527,) 1

CONTENTS: (A) progress report on efforts to correct
Tasker problems as stated in (13592,)
(B) a plan and request to down tasker (7-12)
for 7 consecutive days to implement (G2) 2

[JCN]: Jim by April 30 we will be ready to implement (G2) [items 7-11] on tasker (7-12). It will require downing TASKER (7-12) for 7 consecutive days. (Actually only 4 stations, since 2 are already down) Unless I hear from you otherwise I will send a journal item and notify Jeff Tuesday of next week (4/3) of the schedule and plan as stated in (B). 3

(A) PROGRESS REPORT 4

(G1) IMMEDIATE IMPROVEMENTS W/O DOWNING TASKER 4a

1. TV MONITORS 4a1

In limbo waiting completion of other investigations. 4a1a

Expecting to complete by 4/30. 4a1b

2. DEF. AMPS 4a2

The further investigation we needed to do here is done. It has been determined that the problems can be solved through adjustments. We will adjust tasker (7-12) first as part of implementing (G2) group, then later (some time in MAY) take one bin at a time [two stations] on tasker (1-6). 4a2a

3. LENS FOCUS 4a3

We have located a good quality lens. Waiting manufacturer to ship a demo (35 MM f 1.3) for further trials. Expected around the end of May (5/30). 4a3a

4,5. MOUSE 4a4

Correction completed. We redesigned symbol and had [CHI] change the NLS code to rewrite 3 consecutive times for each writing of the mouse. 4a4a

6. SPOT SIZE 4a5

low priority, still waiting investigation. 4a5a

SUMMARY OF TASKER PROBLEMS, progress report 1

(G2) IMMEDIATE IMPROVEMENTS REQUIRING DOWNING A TASKER 4b

(We are ready to implement) 4b1

7. POWER SUPPLY 4b2

trial hook-up 4b2a

8. CHARACTERS 4b3

adjust Def. amps and then if time permits redesign bad characters 4b3a

9. DYNAMIC FOCUS 4b4

test (in one bin; 2 stations) cards repaired and calibrated in shop, after trial determine what to do next 4b4a

10. MAINTENANCE PANEL 4b5

repair 4b5a

11. TASKER (7-12) WIGGLING CHARACTERS 4b6

repair 4b6a

(G3) IMPROVMENTS REQUIRING BACK ORDERING OF PARTS OR SUPPORT EQUIPMENT. 4c

12. TV TEXT SIZE 4c1

I have requested the purchase of a calibration unit (TV OPTOLINER) that should allow us to accurately adjust and standardize the aspect ratios of our TV Text. 4c1a

13. PERSISTENCE 4c2

Not much to report here, we are still busy looking at a lot of things -- scan converters, CRT phosphors, TV video amplifier calibration methods, ...etc. 4c2a

(B) A POSSIBLE (G2) IMPLEMENTATION PLAN 5

Starting Monday April 30;
- Take Tasker (7-12) down for 7 consecutive days to implement (G2) repairs. (Monday morning to Sunday night) 5a

- Reconfigure terminal configuration as follows: 5b

  6 display terminals on tasker (1-6). 5b1

  4 additional TI terminals in the display area or conference room. 5b2

    (call a couple in from homes and/or reshuffle the ones we have here; similar to what we do for TNLS classes) 5b2a

    (If we need more TTY inputs we could unplug some of the dial-up lines during normal working hours.) 5b2b

MEH 29-MAR-73 11:18 14900

SUMMARY OF TASKER PROBLEMS, progress report 1

(J14900) 29-MAR-73 11:18; Title: Author(s): Hardy, Martin E. /MEH;
Distribution: /EMC; Sub-Collections: SRI-ARC EMC; Clerk: KFB;

MOUSE AND KEYSET CONVERTER, a first cut description.

This is a first cut at a functional design of a prototype Mouse and Keyset converter "Mouse Box". 1

Contents: 1a

(A) Introduction 2

The design objective will be to interface our Mouse and Keyset to a general class of EIA ASCII display terminals that allow Curser addressing. Specifically the unit will interact with and be the go-between for a display terminal, Mouse and Keyset, and an external processor. Connections may be via modem, acoustic coupler or hardwire with communication code ASCII in accordance with EIA Bit Serial Standards. 2a

MOUSE AND KEYSET CONVERTER, a first cut description.

(B) Mouse Box functions: 3

(B1) Sense the Mouse x and y analogue voltages and convert to an (x,y) digital pair. 3a

Each coordinate address will have a microprogrammable length from 4 to 8 bits. 3a1

(B2) Sense the Mouse buttons and Keyset switches 3b

Any down level and all up transitions. 3b1

(B3) Convert Mouse and Keyset switches to standard ASCII 7 bit characters. 3c

As specified in (F), (G), and (B7). 3c1

(B4) Automatically transmit converted Mouse buttons and Keyset codes to an external processor. 3d

Initiated by transmit commands specified in: (F), (G), and (B7). 3d1

(B5) Provide mouse interrogate capabilities. 3e

A mouse position string will be sent to the external processor upon receipt of a special character from the external processor or upon completion of a down/up cycle of the mouse (CA) button (mouse code 001). The special character match will be microprogrammable. 3e1

I plan not to buffer characters coming from the display terminal, therefore any display terminal characters transmitted at the same time this function is in progress will be lost or garbled. 3e2

String format: 3e3

1 or 2 header characters (each microprogrammable) followed by a 2 character (x,y) Mouse position address. 3e3a

e.g.: (SC)(SC)(x)(y) or (SC)(x)(y) 3e3a1

(B6) Provide an on/off controllable function that repeatedly sends Mouse position address to terminal. 3f

The external processor will be able to control this function by sending special enable, initiate, or inhibit

characters. There also will be a switch for manual control. 3f1

This feature will enable mouse updates and does not require translation or echoing by the external processor. 3f2

If a conflict exists between the Mouse string and incoming external processor characters intended for the display terminal, the processor characters will be buffered and sent in strings of 4 multiplexed between the Mouse address strings. 3f3

String format: 3f4

1 or 2 header characters (each microprogrammable) followed by a 2 character Mouse position address. This string will be identical to the one defined in (B5). 3f4a

(B7) Send Viewspec character string 3g

When a Viewspec command from the Mouse buttons is detected (buttons 110 depressed) A special header character will be sent to the external processor to signify the following characters are Viewspec characters. The string's end will be signified by a special terminator character sent when all Mouse buttons are released (code 000). 3g1

If a Mouse button code 010 is sensed before a termination code 000, coinciding Keyset characters will be transmitted as upper case. (This function may come free as the attribute of another circuit and will be a new feature not incorporated in our present system.) 3g2

String format: 3g3

1 header character and 1 terminator character (each microprogrammable). 3g3a

String sequence and map: 3g3b

mouse buttons states (110).....(010)....(000)

character string (hc)(ks)...(KS)(KS)..(tc) 3g3b1

MOUSE AND KEYSET CONVERTER, a first cut description.

(C) Summary 4

The unit I am describing here is a prototype. It's construction will enable us to evaluate and determine costs of such a device. 4a

I estimate it will take 3 to 4 man weeks to do all circuit design + 3 man weeks to build + parts delivery delay... 2 to 8 weeks?? If we started immediately and all went well the unit might be operational in 8 to 9 weeks. 4b

Since time is of the essence, and this functional design has not been reviewed by anyone other than hardware personnel. I recommend we implement concurrently with the review of the hardware design not effected by the unit's overall operation; (Mouse A/D conversion, keyswitch detection, line transmitters, buffers, etc). This will shorten the design time necessary after completion of the review process. There is currently an Engineer available from the Digital Development Group and we should take advantage of this and have him start on the aforementioned design. 4c

[MDK] says he would like very much to review my suggested alternative Mouse and Keyset switch correspondence. If the correspondence is not acceptable, or more investigation is desired, I recommend someone other than myself be the principal investigator, I am personally swamped and have other priorities I would rather attend to in addition to directing this Device's circuit design. 4d

(D) Typical Operations 5

1. To DISPLAY MOUSE POSITION CONTINUOUSLY on display terminals screen: 5a

The external processor must send "enable character" (B6) and an "initiate character" (B6), Mouse Box will decode and immediately start sending display terminal repeatedly "mouse positioning strings" (B6), multiplexing between each string all other characters intended for the display terminal (B6). 5a1

2. To READ MOUSE POSITION: 5b

The external processor must send an "interrogate character" (B5), Mouse Box will decode and send back to the external processor a "position string" (B5). 5b1

3. To SEND MOUSE POSITION: 5c

Depress and release Mouse (CA) button, the Mouse Box will send to the external processor a "position String" (B5). 5c1

4. To TRANSMIT KEYSET CHARACTERS: 5d

Depress any and release all keyset switches, Mouse Box will detect and send to the external processor a "character" (B4). 5d1

5. To SEND VIEWSPEC's 5e

See (B7). 5e1

6. To REPLACE CHARACTER or WORD, initiated by (CA) button function: 5f

Mouse Box sends a "Mouse position string" (B5) to the external processor. the external processor sends back an "inhibit Mouse update character" (B6), followed by a "display terminal curser address string" "replacement character or word" and last an "enable Mouse update character" (B6). 5f1

7. To REPLACE TEXT, initiated by (CA) button function: 5g

The external processor waits for receipt of 3 "mouse position string" (B6), when received the external Processor sends "inhibit Mouse update character" (B5), "display terminal Curser address string", "replacement text", and last an "enable Mouse update character" (B6). 5g1

8. To REPLACE CHARACTER, WORD or TEXT, initiated by the External Processor: 5h

External processor sends "inhibit Mouse update character" (B5), "display terminal Curser position string" "text" and last an "enable Mouse update character" (B5). 5h1

(E) Notes about Code table (F) 6

It appears impossible to preserve the exact code correspondence for our Mouse and Keyset without seemingly excessive hardware costs. I estimate to make an exact code conversion the units net hardware cost will be increased by greater than $100.00 this means at least $300.00 to a buyer. I therefore have taken the liberty to draw up an alternative correspondence shown in table (F). This correspondence is very similar to what we have now. All Alpha-Numeric and Mouse Button functions are unchanged. The only differences I can find are those I have signified by asterisks. The additional control character field (Mouse buttons 101) was added because it seemed to be a logical and easy extension. I personally think this table represents a reasonable alternative since it preserves the most often used codes and keeps hardware costs within bounds. 6a

(F) Code Table (F) 7

Determined by: (any Keyset switch down then all up) and (Mouse button levels) 7a

MO, 2, 4, 5 = octal code of Mouse button 7b

(The binary translations of these codes are an exact image of the Mouse buttons as seen and operated by a user, assuming both are in normal position.) 7b1

ASC = X3.4-1968 ASCII code standard 7c

DOUBLE CHARACTER fields (the field with an asterisk mark to the left):
LEFT character is the suggested new correspondence
RIGHT character is our present correspondence 7c1

NOM = ASCII symbol or name 7d

K = Keyset code (5 bits, octal)
least significant bit is the right most keyset switch 7e

( ) = see notes at end of table 7f

TABLE (F)

M	K	ASC	NOM	M	K	ASC	NOM	M	K	ASC	NOM	M	K	ASC	NOM
5	00	0	Null	0	37	40	SP	-	--	100	@ (1)	-	--	140	'(1)
5	01	1	SOH	4	01	41	!	2	01	101	A	0	01	141	a
5	02	2	STX	4	02	42	"	2	02	102	B	0	02	142	b
5	03	3	ETX	4	03	43	#	2	03	103	C	0	03	143	c
5	04	4	EOT	4	04	44	$	2	04	104	D	0	04	144	d
5	05	5	ENQ	4	05	45	%	2	05	105	E	0	05	145	e
5	06	6	ACQ	4	06	46	&	2	06	106	F	0	06	146	f
5	07	7	BEL	4	07	47	'	2	07	107	G	0	07	147	g
5	10	10	BS	4	10	50	(	2	10	110	H	0	10	150	h
5	11	11	HT	4	11	56	)	2	11	111	I	0	11	151	i
5	12	12	LF	*4	12	52	* @	2	12	112	J	0	12	152	j
5	13	13	VT	4	13	53	+	2	13	113	K	0	13	153	k
5	14	14	FF	4	14	54	,	2	14	114	L	0	14	154	l
5	15	15	CR	4	15	55	-	2	15	115	M	0	15	155	m
5	16	16	SO	4	16	56	.	2	16	116	N	0	16	156	n
5	17	17	S1	4	17	57	/	2	17	117	O	0	17	157	o
5	20	20	DLE	4	20	60	0	2	20	120	P	0	20	160	p
5	21	21	DC1	4	21	61	1	2	21	121	Q	0	21	161	q
5	22	22	DC2	4	22	62	2	2	22	122	R	0	22	162	r
5	23	23	DC3	4	23	63	3	2	23	123	S	0	23	163	s
5	24	24	DC4	4	24	64	4	2	24	124	T	0	24	164	t
5	25	25	NAK	4	25	65	5	2	25	125	U	0	25	165	u
5	26	26	SYN	4	26	66	6	2	26	126	V	0	26	166	v
5	27	27	ETB	4	27	67	7	2	27	127	W	0	27	167	w
5	30	30	CAN	4	30	70	8	2	30	130	X	0	30	170	x
5	31	31	EM	4	31	71	9	2	31	131	Y	0	31	171	y
5	32	32	SUB	*4	32	72	: =	2	32	132	Z	0	32	172	z
5	33	33	ESC	*4	33	73	; [	*2	33	133	[<	*0	33	173	(3)
5	34	34	FS	*4	34	74	<]	*2	34	134	>	*0	34	174	.
5	35	35	GS	*4	35	75	= ←	*2	35	135	] :	*0	35	175	;
5	36	36	RS	*4	36	76	> ALT	*2	36	136	(2)	*0	36	176	?
5	37	37	US	*4	47	77	? CR	*2	37	137	- SP	-	--	177	DEL

code notes

(1) = characters that cannot be generated unless assigned to control characters.

(2) = circumflex

(3) = open brace

(G) Mouse codes 8

Mouse buttons down and Keyset down/up 8a

110 = lower case Viewspec; Sends a character string (B7). 8a1

010 = upper case character: Will be within a Viewspec string if immediately preceded by a Mouse code 110 without releasing the 010 button. 8a2

Mouse button down/up and not Keyset 8b

001 = CA 100 = BC 8b1

010 = CD 110 = BW 8b2

MEH 11-APR-73 08:50 14901

MOUSE AND KEYSET CONVERTER, a first cut description.

(J14901) 11-APR-73 08:50; Title: Author(s): Hardy, Martin E. /MEH ;
Distribution: /dia dcw kev dsk rww jcn chi dce dvn ;
Sub-Collections: SRI-ARC; Clerk: MEH;

MEH 11-APR-73 09:56 14902

MOTOR GENERATOR, Memo to SRI purchasing (Mr Cannon) requesting bids.

Frank: In response to our telephone conversation (4/4). Enclosed is guideline specifications for a request for bids on a 50KW and 100Kw Motor Generator unit with ride through capabilities. The double bid is necessary because it is not yet settled (and some what dependent on returned bids) whether or not the power unit will supply more than one facility. We will concider bids for purchasing, leasing or renting a new or reconditioned unit. Only one unit is needed, therefore bids should be for single units. 1

Some possible suppliers: 1a

General Electri; new/reconditioned 1b

Applied Logic; reconditioned/used 1c

Others? 1d

QUOTATION GUIDE 2

(A) Introduction 2a

(B) Specification for a 50KW unit 2b

(C) Specification for a 100KW unit 2c

(A) Introduction 3

This Motor Generator unit will supply the primary power to one or more Computer facilities. It will be installed in the basement of Engineering building 30 room L-0006. The input power available for running this unit is 480 volts, 3 phase "Y" connected. 3a

MOTOR GENERATOR, Memo to SRI purchasing (Mr Cannon) requesting bids.

(B) GUIDELINE SPECIFICATION FOR A 50KW RIDE-THROUGH POWER SUPPLY 4

Rating: Atleast 50 kw and 62.5 kva output at 120/208 volts, 3 phase, 60 hertz (nominal) with input at 480 volts, 3 phase, 60 hertz "Y" connection in a dripproof enclosure with Class B insulation to provide 100% output at 100% volts during a power interruption lasting 1 second (1000 milliseconds) while maintaining full load frequency of not less than 59.5 hertz. 4a

This unit will be built in accordance with applicable NEMA standards with the following, or comparable, features: 4b

FLYWHEEL -- Pedestal-mounted 4b1

Precision balanced with sufficient rotating inertia to maintain generator output frequency above 59.50 hz for 1.0 seconds after power interruption. 4b1a

INPUT MOTOR -- Low-slip induction-type 4b2

Suitable hp, 1800-rpm 480 volts, "Y" connection, 3-phase, 60 hz with 1/2% slip if for 3-phase generator output, having special starting circuit which limits in-rush current to 200% of full load current. 4b2a

OUTPUT GENERATOR -- Brushless, synchronous 4b3

50 kw, 1800 rpm, 120/208 volts 3-phase 60 hertz, 0.8 power factor with brushless exciter. 4b3a

BASE -- Fabricated steel, self-supporting 4b4

Vibration mounts with fabricated steel guards covering flywheel and all couplings for operator's safety. 4b4a

INPUT CONTROL 4b5

* NEMA 2 driptight enclosure.
* Motor starter.
* Disconnect switch, motor input power.
* Time-delay relay (TDR), adjustable, on motor starter for ride-through.
* Start-stop pushbutton with provision for remote start-stop pushbuttons.
* Indicating light indicating motor-on; with provision for remotoring. 4b5a

MOTOR GENERATOR, Memo to SRI purchasing (Mr Cannon) requesting bids.

OUTPUT CONTROL 4b6

* NEMA 2 driptight enclosure.
* Voltage regulator, +/- 2% accuracy.
* Relay to remove generator excitation at low speed to protect generator from overexcitation.
* Voltage adjusting potentiometer with provision to remote +/- 10% adjustment.
* Circuit breaker for generator output.
* Voltmeter.
* Voltmeter selector switch to monitor 3-phase.
* Ammeter on each phase.
* Elapsed time meter. 4b6a

CONTROL OPTIONS 4b7

* Output underfrequency relay, adjustable over range of 55 to 60 Hz, to signal critical load when output frequency has decayed to preselected level. 4b7a

MOTOR GENERATOR, Memo to SRI purchasing (Mr Cannon) requesting bids.

(C) GUIDELINE SPECIFICATION FOR A 100KW RIDE-THROUGH POWER SUPPLY 5

Rating: Atleast 100 kw and 100 kva output at 120/208 volts, 3 phase, 60 hertz (nominal) with input at 480 volts, 3 phase, 60 hertz "Y" connection in a dripproof enclosure with Class B insulation to provide 100% output at 100% volts during a power interruption lasting .3 second (300 milliseconds) while maintaining full load frequency of not less than 59.5 hertz. 5a

This unit will be built in accordance with applicable NEMA standards with the following, or comparable, features: 5b

FLYWHEEL -- Pedestal-mounted 5b1

Precision balanced with sufficient rotating inertia to maintain generator output frequency above 59.00 hz for .3 seconds after power interruption. 5b1a

INPUT MOTOR -- Low-slip induction-type 5b2

Suitable hp, 1800-rpm 480 volts, "Y" connection, 3-phase, 60 hz with 1/2% slip if for 3-phase generator output, having special starting circuit which limits in-rush current to 200% of full load current. 5b2a

OUTPUT GENERATOR -- Brushless, synchronous 5b3

100 kw, 1800 rpm, 120/208 volts 3-phase 60 hertz, 0.8 power factor with brushless exciter. 5b3a

BASE -- Fabricated steel, self-supporting 5b4

Vibration mounts with fabricated steel guards covering flywheel and all couplings for operator's safety. 5b4a

INPUT CONTROL 5b5

* NEMA 2 driptight enclosure.
* Motor starter.
* Disconnect switch, motor input power.
* Time-delay relay (TDR), adjustable, on motor starter for ride-through.
* Start-stop pushbutton with provision for remote start-stop pushbuttons.
* Indicator light, Indicating motor-on; with provision for remotoring. 5b5a

MOTOR GENERATOR, Memo to SRI purchasing (Mr Cannon) requesting bids.

OUTPUT CONTROL 5b6

* NEMA 2 driptight enclosure.
* Voltage regulator, +/- 2% accuracy.
* Relay to remove generator excitation at low speed to protect generator from overexcitation.
* Voltage adjusting potentiometer with provision to remote +/- 10% adjustment.
* Circuit breaker for generator output.
* Voltmeter.
* Voltmeter selector switch to monitor 3-phase.
* Ammeter on each phase.
* Elapsed time meter. 5b6a

CONTROL OPTIONS 5b7

* Output underfrequency relay, adjustable over range of 55 to 60 Hz, to signal critical load when output frequency has decayed to preselected level. 5b7a

MEH 11-APR-73 09:56 14902

MOTOR GENERATOR, Memo to SRI purchasing (Mr Cannon) requesting bids.

(J14902) 11-APR-73 09:56; Title: Author(s): Hardy, Martin E. /MEH ; Distribution: /emc chi dcw dvn ; Sub-Collections: SRI-ARC EMC; Clerk: MEH;

MEH 20-APR-73 12:46 14903

SUMMRY OF TASKER PROBLEMS, Implementation of G2.

Ref: (14900,) (13592,) (13584,) (13527,) 1

Tasker stations (9, 10, 11, 12) will be taken down Saturday, May 18 for 7 consecutive days to perform necessary maintenance outlined in (13592,G2:). (A hardcopy is pinned up on the Journal bulletin board in display area next to RWW's office.) 2

Interim arrangements will be as follows: 3

TASKER STATIONS 3a

(1); DCE's office 3a1

(2, 3, 4, 5); display area 3a2

(6); 525 line system set up in the conference room and connected into the TV projector system. 3a3

IMLAC 3b

; connected as normal 3b1

TELETYPE LIKE TERMINALS 3c

4 TI terminals set up in display area to replace the downed taskers. 3c1

(If necessary we will unplug some of the dial-up lines during regular hours to accommodate.) 3c2

Please bear with us and hopefully we will see some noticeable improvements. Thanks. 4

14903 Distribution

Van De Riet, Edwin K. , Van Nouhuys, Dirk H. , Victor, Kenneth E. (Ken) , Wallace, Donald C. (Smokey) , Watson, Richard W. , Andrews, Don I. ,
Keeney, Marcia Lynn , Hoffman, Carol B. , Lee, Susan R. , Michael, Elizabeth K. , Dornbush, Charles F. , ARC, Guest O. , Feinler, Elizabeth J. (Jake) , Handbook, Augmentation Research , Kelley, Kirk E. , Meyer, N. Dean , Byrd, Kay F. , Prather, Ralph , White, James E. (Jim) , Vallee, Jacques F. , Kaye, Diane S. , Rech, Paul , Kudlick, Michael D. , Ferguson, Ferg R. , Lane, Linda L. , Auerbach, Marilyn F. , Bass, Walt , Engelbart, Douglas C. , Hardeman, Beauregard A. , Hardy, Martin E. , Hopper, J. D. , Irby, Charles H. , Jernigan, Mil E. , Lehtman, Harvey G. , North, Jeanne B. , Norton, James C. , Paxton, William H. , Peters, Jeffrey C. , Ratliff, Jake

Mouse and Keyset Converter, Status Report #1

This is a status report for the proto Mouse box we are designing that will connect our Mouse and Keyset to a class of low cost video display terminals. 1

Ref: (15734,)(15399,)(15313,)(14901,) 1a

Contents:

Mouse and Keyset Converter, Status Report #1

(A) Summary 2

The proto unit is being designed using a mass produced micro-computer (Intel's MSC-4 series) and a few other large and medium scale intergration devices. 2a

Don Andrews will do the initial microprogramming of the micro-computer, probably through Tymshare since they have the assembler and hardware simulator for the intel unit, and Walter Greene of the Digital Development Group (org 720) will do the detailed hardware design. 2b

By the end of this month (5/31) we hope to have a video terminal here and the proto unit working, so if all goes well the configuration will be ready for experimental use by the first of June. 2c

Once some experimenting is done we will settle on the exact design, determine packaging, and then reevaluate to minimize end user costs. (A rough estimate still has it under $1000.) 2c1

One problem we have is the ROM manufacturers charge a setup fee of $600 for the first 3 ROM's and thereafter minimum orders of 25 at $25 each. This means at some point we will have to face this fact and find a reasonbale solution (guarantee sales, absorb setup charge, amortize, etc.)?? 2d

There is an alternative that is desirable from a software standpoint: We could use a programmable ROM (PROM) instead of an ROM, actually this is what we will be using in the proto-type unit. 2d1

It offers 3 advantages: 2d1a

1) You can burn in programs yourself, if you have the right gadget. 2d1a1

2) You can erase burned in programs by exposing the PROM to ultra violet light. Then reprogram. (Perhaps a disadvantage?) 2d1a2

3) You can purchase in single quantities. 2d1a3

And one major disadvantage: 2d1b

1) It adds $100 to the parts cost. 2d1b1

(B) Design Decisions and General Dicussions 3

It was decided to design the proto Mouse box around a micro-computer unit. The state of the art these days is a complete micro-unit (with an operating instruction set of 45 instructions) packaged in a 2 x 3 square inch area. The micro-computer's data bussing and micro-peripherals will be designed using LSI and MSI devices. These devices will collect and pass conditioned information to and from the micro-computer for interim processing. Data formatting, string conversion, code conversions, routines, and the like will be pre-programmed (initially by Don Andrews) and burned into (as they say) a Read-Only-Memory (ROM) that is part of the micro-computer set. 3a

This particular micro-computer is limited by a 4-bit parallel I/O buss and an instruction cycle of 10.8 micro seconds. The external world is 8-bits serial with comparatively slow data rates. (a TIP's KSR limit is 2400 baud = 4150 micro seconds/word). This means in the worst case the micro-computer can execute approximately 400 instructions (do Mouse keyset conversion or send data) before it must service the external processor and display terminal receive communication channels. This appeared to be a workable margin, and coupled with cost (< $150 for the micro-computer unit) was enough to convince us to try. 3a1

Another decision was to build the proto unit in modular form to get a clear picture of the cost of each functional module and allow flexibility to reconfigure without total redesign. We could then make subsets (mouse only?) from this unit with little alterations if so desired. 3b

The proto unit will be rather bulky and ugly because we are not doing final design or worrying much about packaging. This will come later when we know exactly what we want. 3c

(C) Construction Status 4

The proto design is mostly done and will be finished by 5/11. There exists at SRI a lab micro-computer set (one that was bought by SRI for experimenting and multi-purpose use). It's size is rather large (12" x 24") but we will use it anyway and couple to it 2 A/D converters, switch detect logic, data multiplexing and the like, so you can see it will be at best ugly and bulky. I anticipate our final product to be contained in a box no larger than (5" x 12"). 4a

During the first part of the week 5/14 construction of circuitry and cable make-up should get started. We expect to have all the parts we ordered in by the end of that week, meaning we can test our circuitry the week of 5/21. If all goes well, the proto Mouse box will be ready for system hook-up and experimental use by the week of 5/21. Dirk informs me our Hazeltine Display Terminal should be here by then. So with any luck we will see a proto Mouse box in operation by the first part of June. 4b

(D) Cost Estimates 5

So far it looks like the cost of parts for one Mouse box will be under $400. (This assumes the design we are currently talking about and buying in single quantities.) 5a

Once we have finalized the the Mouse box design I will look for someone to build it for resale. Since all the engineering cost and art work will be done, the tacked-on charge should be minimal, at least not the normal 3X factor. The target and current estimate is and end user product for under (hopefully well under) $1000. 5b

NMDT meeting report: March 5, 1973 1

Participats: CFD, CHI, JGM 1a

Agenda: 1b

1) Disposition of the justification paper 1b1

No objections were raised to the literary efforts of JGM, and it was agreed to let him make whatever esthetic changes he considered necessary in the paper. We agreed to pass the paper on to any interested parties by the end of this week, to allow us to concentrate our full attention to the modelling of NLS task. 1b1a

2) Progress on modelling NLS. 1b2

Most of our discussion centerd on the interface between the "user interface" and "command language interpreter" sections of NLS. We tried to define the types of messages that would appear over the port connecting these two sections, and compiled the following list: 1b2a

U. I. sends 1b2a1

next request 1b2a1a

fail code: last request could not be satisfied 1b2a1b

literal string 1b2a1c

t-ptr (including display area id and screen coords) 1b2a1d

character 1b2a1e

U. I. receives (from C. L. I.) 1b2a2

get bug 1b2a2a

get literal (text area) 1b2a2b

get literal (name area) 1b2a2c

get character 1b2a2d

process viewspecs 1b2a2e

reset 1b2a2f

set literal terminators 1b2a2g

It is clear that we have not handled the general problem of handling user feedback. We need some method of invoking device dependent feedback in a device independent manner. I think we need to consider the definition of parse states in the C. L. I. Associated with each parse state is a feedback operation, We also need the concept of definable parse states in order to do a decent job of handling the generalized "help" problem. What do you think? 1b2b

Next Meeting: 1c

The next meeting of NMDT will be held on Wed, Mar. 7 at 10:00 AM. It is apparent that we need to spend as much time as possible in the next seveal weeks to define a clean model for NLS. 1c1

14906 Distribution
Irby, Charles H. , Dornbush, Charles F. , Mitchell, James G. , Paxton, William H. , Deutsch, L. Peter , Wallace, Donald C. (Smokey) , Satterthwaite, Ed H. , Bass, Walt , Andrews, Don I. , Watson, Richard W. ,

CFD 6-MAR-73 10:14 14906

NMDT Meeting Report for March 5, 1973

(J14906) 6-MAR-73 10:14; Title: Author(s): Dornbush, Charles F. /CFD ; Distribution: /NMDT NMRT RWW ; Sub-Collections: SRI-ARC NMDT NMRT; Clerk: CFD ;

DVN 6-MAR-73 16:50 14907

COM for SAB, DELDIR

I got a sndmsg back from Duane today. He says to chose a file that shows off COM. You pick one. They will need 30 copies on the26th. Aversion of the COM user guide or part of it might be good.
You've got the problem. I ran deldir as an assimilate on SPQR, it ran a long time, used up cpu time, but what I got was that blank file.

1

DVN 6-MAR-73 16:50 14907

COM for SAB, DELDIR

(J14907) 6-MAR-73 16:50; Title: Author(s): Van Nouhuys, Dirk H. /DVN; Distribution: /NDM JCN(for your information) DLS(for your information); Sub-Collections: DPCS RADC SRI-ARC; Clerk: DVN;

DVN 6-MAR-73 17:12 14908

Call for Contributions to the Quarterly Management Report

Each quarterly managment reporthas a section entitled Major Accomplishments. 1

For last quarter's major accomplisment's see --journal,13744,3) 1a

I propse the following outline and responsiblity for this quarter's major accomplisments: 2

Network Information Center (NIC)--MDK 2a

Dialog Support System (DSS)--CHI 2b

Software Development---RWW 2c

Preparation for Utility---JCN 2d

I would apprecaite each of the people named preparing about half a page for the report by next Tuesday (3/13). Be brief. If there are no accomplishments, don't claim any. 3

DVN 6-MAR-73 17:12 14908

Call for Contributions to the Quarterly Management Report

(J14908) 6-MAR-73 17:12; Title: Author(s): Van Nouhuys, Dirk H. /DVN; Distribution: /MDK RWW JCN CHI KFB(please make 4 copies of this and deliver it manually to the four gentlemen.); Sub-Collections: SRI-ARC; Clerk: DVN;
Origin: <VANNOUHUYS>PLNPLN.NLS;1, 6-MAR-73 17:09 DVN ;

JBN 6-MAR-73 16:06 14909

Status of ARPANEWS, Progress Report to JI

Jean-- Down to the wire. V. Cerf is too frantically busy to give us the summary, so that may be in next month. The files are in shape, I think. The file which the nic language will access is in <nic-work>arpanews. The file to be used for printing, either ODT or ODP, is in <nic>arpanews. The file in my directory is the ODP file, for backup. The only holdup now is the last step in the nic language to eliminate having to -b/ring/<nic-work>arpanews. This was to be fixed by tonight, but it will be tomorrow, it seems. I still have to proofread Davis full text, which someone else entered, and journalize it so the link works. Also tomorrow morning. --Jeanne 1

JBN 6-MAR-73 16:06 14909

Status of ARPANEWS, Progress Report to JI

(J14909) 6-MAR-73 16:06; Title: Author(s): North, Jeanne B. /JBN;
Distribution: /ji rww mdk nicsta ; Sub-Collections: SRI-ARC NICSTA;
Clerk: JBN;

Subcollection field handling by the Journal 1

Default setting 1a

The default setting of the sub-collection field depends on whether the author: 1a1

has a sub-collection field in the ident file, in which case it is used, 1a1a

or if the author is a group, the group ident is used 1a1b

or if he is an individual with affiliation SRI-ARC, SRI-ARC is used, 1a1c

or if he is an individual with some other affiliation, NIC is used. 1a1d

If the author is set by the journal subcommand, the subcollection field is cleared to the default setting for that author by the default algorithm above. (I haven't tried this, but this is what I get from reading the code) 1b

The sub-collection subcommand in the journal accepts a list of group idents and changes the sub-collection field to that list. 1c

After submission is complete, the delivery process adds to the subcollection list any group idents not already there. In addition, if the submission is an RFC, then NWG and NIC are added (if they aren't there already). 1d

The status subcommand shows the above idents as part of "sub-collections". Thus these idents are out of the direct control of the user. 1d1

JDH 6-MAR-73 13:03 14910

Journal Subcollection Field

(J14910) 6-MAR-73 13:03; Title: Author(s): Hopper, J. D. /JDH;
Distribution: /mdk chi ; Sub-Collections: SRI-ARC; Clerk: JDH;

JEW 6-MAR-73 16:21 14911

Print Journal

Alex-- 1

with regard to (14577,), the intended function of control-O in 'Print Journal' is to halt printout at the end of the current STATEMENT. 1a

I can construct no situation in which in fails to do this. If you know of a case, I need to know what it is. If you want to abort the current statement (right now!) and contnue with the next, control-S will do that, as it does everywhere in NLS. 1b

The fact that a string of characters disappears at the point in time when you hit control-O, as oppposed to when it actually takes effect, is something that's not easily gotten rid of, and results from the asynchrony between input and output; your output buffer gets flushed when the control-O is received. Control-O behaves in the same way wherever else it's allowed in the system. 1c

Print Journal

(J14911) 6-MAR-73 16:21; Title: Author(s): White, James E. (Jim) /JEW; Distribution: /aam ; Sub-Collections: SRI-ARC; Clerk: JEW; Origin: <WHITE>PJ.NLS;2, 6-MAR-73 16:20 JEW ;

KIRK 6-MAR-73 16:56 14912

Requests to be considered in DEX design review.

In defence of the DEX design principle to make DEX as much like TNLS as possible, I request that in addition to the characters used in simplified DEX for BW "<" and BC ">", that the characters used in TNLS for BW "↑W" and BC " " ALSO be available for use in DEX. 1

Although this "violates" one of the design principles of DEX in that ↑W would be invisible, it gives the alternative to the user at no cost to any other user's input time who would want to have a visible signal. 2

Also another help to the user's ability to transfer from DEX to TNLS and back would be that BW work in the simplified version of DEX as it currently does in TNLS. 3

The reasons for these requests are as follows: 4

The simplified version of DEX is more for the use of good trascribers on TI's, than the use of offline Display oNLine System users using 33's. 4a

A good transcriber does not look at what IS BEING transcribed or at the keyboard but instead, looks at what is TO BE transcribed. Also, a transcriber is more concerned with what is being transcribed than the system in which it is being transcribed. 4b

For these reasons it is important that the same buttons do the same things no matter whether the transcriber is in TNLS or DEX. 4c

KIRK 6-MAR-73 16:56 14912

Requests to be considered in DEX design review.

(J14912) 6-MAR-73 16:56; Title: Author(s): Kelley, Kirk E. /KIRK;
Distribution: /hgl chi wlb dce jcn dvn ; Sub-Collections: SRI-ARC;
Clerk: KIRK;

ARC Function - IDENT table

Director	DCE	1
Operations,Utility	JCN DVN	2
Research & Development	RWW	3
NIC	MDK JBN	4
JEW Liason,Software development		4a
JAKE Resource Notebook		4b
BAH Catalog Programs		4c
MEJ Library and information updating		4d
SRL CBH Station Agent		4e
Analysis	PR JFV DIA	5
Hardware	MEH EKV JR RD JP	6
TENEX	DCW WRF KEV JP	7
NLS	CHI DSK HGL CFD	8
Journal	JDH	9
Output Processor	WLB	10
Calculator	EKM	11
Tnls Query	JFV	12
Documentation	DVN MFA	13
Secretaries	KFB	14
Transcribers	LLL KIRK	15

ARC Function - IDENT table

(J14914) 6-MAR-73 22:03; Title: Author(s): Kelley, Kirk E. /KIRK;
Sub-Collections: SRI-ARC; Clerk: KIRK;

MDK 6-MAR-73 9:07 14915

MINOR SUGGESTIONS re the Journal.

The citations that the Journal system delivers into one's initial file could be improved in usability, in my opinion. 1

I suggest the following changes: 1a

1) The "location" should be cited in the first line immediately following the signature, and replacing the current "number" (which is useless on-line). This has two advantages: 1a1

One, it means that in TNLS one can always use the up-arrow to take the first link in a citation, witnout worrying whether the author placed parenthetical expressions in his title. 1a1a

Two, the readability is improved, and the number of text lines needed for the citation is reduced by one. 1a1b

Incidentally, I don't think the string "Location: " is needed. 1a1c

2) The citation for MESSAGES should contain the appropriate link, in the same way as for other journal items. 1a2

3) The default viewspecs for the initial file when it is first opened following the Exec command "NLS" should be xbryn (for TNLS they should be xbrym) in addition to whatever is now in the default. The default statement address should be "JOURNAL". 1a3

The "status" command in the Journal subsystem should let you see some more things, specifically: 2

- the name of the file, or statement, plex, branch, that is being submitted; 2a

- the message that has been submitted (in its entirety); 2b

- all default values that the system assigns. 2c

MDK 6-MAR-73 9:07 14915

MINOR SUGGESTIONS re the Journal.

(J14915) 6-MAR-73 9:07; Title: Author(s): Kudlick, Michael D. /MDK;
Distribution: /bugs jdh rww ; Sub-Collections: SRI-ARC BUGS; Clerk:
MDK;
Origin: <KUDLICK>CITES.NLS;2, 6-MAR-73 9:04 MDK ;

Request for another part-time person

SRL 6-MAR-73 14:36 14916

Request for another part-time person

I believe that due to an increased work load, it would be well to hire another part-time person for the days Carol is not here (Mon., Wed., and Fri.). At times this person could help Mil with herwork. From my viewpoint it seems that one new part time person could fill the one empty PSO position (the other members of PSO might not agree). 1

Request for another part-time person

(J14916) 6-MAR-73 14:36; Title: Author(s): Lee, Susan R. /SRL;
Distribution: /JCN DVN JBN; Sub-Collections: SRI-ARC; Clerk: SRL;

<ILLINOIS>WJB.NLS;3, 6-MAR-73 7:22 WJB ; 1

STEVE: 1a

MIKE AND I LOOKING FORWARD TO YOUR VISIT THIS WEEK. 1b

IF YOU HAVE ANY PARTICULAR TOPICS YOU WANT TO DISCUSS THAT WE SHOULD PREPARE FOR, PLEASE DROP ME A NOTE HERE AT NIC WITH A LISTING. 1c

THANKS...SEE YOU FRIDAY. 1d

WJB 1e

14917 Distribution
Bouknight, W. Jack , Sher, Michael S. , Cohen, Stanley ,

(J14917) 6-MAR-73 7:28; Title: Author(s): Bouknight, W. Jack /WJB;
Distribution: /WJB MSS SC; Sub-Collections: NIC; Obsoletes Document(s):
; Clerk: WJB;

WJB 6-MAR-73 7:31 14918

DISREGARD MY MESSAGE

<ILLINOIS>WJB.NLS;3, 6-MAR-73 7:30 WJB ; 1

STAN: 1a

SORRY..THE PREVIOUS NOTE WAS INTENDED FOR STEVE CROCKER AND I TYPED HIS IDENT WRONG. 1b

J BOUKNIGHT U OF I 1c

14918 Distribution
Cohen, Stanley , Bouknight, W. Jack , Sher, Michael S. ,

WJB 6-MAR-73 7:31 14918

DISREGARD MY MESSAGE

(J14918) 6-MAR-73 7:31; Title: Author(s): Bouknight, W. Jack /WJB;
Distribution: /SC WJB MSS; Sub-Collections: NIC; Clerk: WJB;

NWG/RFC# 476 AAM 7-MAR-73 11:05 14920
IMP/TIP Memory Retrofit Schedule (Revision 2)

IMP/TIP Memory Retrofit Schedule 1

This revision contains two types of changes to RFC #447. First, the retrofits to Utah, Belvoir, NOAA, USC, Stanford, ISI, Case, and CCA have been completed and are therefore removed from the schedule. Second, the retrofits to UCSB, ETAC, Aberdeen, and Rome have been rescheduled. 1a

The revised text of RFC #447 follows:

1b

During the first several months of 1973 we will be retrofitting each IMP and TIP with additional core memory. At the end of the retrofit program, the memory sizes of the various machines will be as follows: 1c

IMP (516 or 316) - 16K words 1c1

TIP - 28K words 1c2

TIP with Magnetic Tape Option - 32K words 1c3

In addition, the expansion of the TIP core memory will necessitate enlarging the TIP to two cabinets. 1d

Listed below is the schedule for the remaining retrofits. We have arranged this schedule to coincide with the usual monthly Preventive Maintenance at each site so as to minimize user inconvenience, but the work required will frequently require the machines to be down longer than normal. I will issue additional RFC's updating this schedule as necessary. 1e

Any site which anticipates difficulty with the expansion of TIP size, and thus the floor space requirement, should contact Hawley Rising (BBN) at
(617) 491-1850 ext. 473
All dates given below are in the form (month/day) 1f

SRI (3/7) 1f1

ETAC (3/15) 1f2

FNWC (3/15) 1f3

Rome (3/16) 1f4

UCLA (3/19) 1f5

AMES IMP (3/21)	1f6
GWC (3/22)	1f7
Carnegie (4/4)	1f8
SDC (4/17)	1f9
Illinois (4/18)	1f10
UCSB (5/1)	1f11
Aberdeen (postponed indefinitely)	1f12

14920 Distribution

Ashenhurst, Robert L. ,
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