

The COMPUTER MUSIC ASSOCIATION NEWSLETTER
VOL 1, No 3, August, 1980

In this issue of the C.M.A. Newsletter, you will find several announcements including; a call for nominations to the volunteer C.M.A. Board of Directors, a call for computer music compositions for IRCAM's "The Composer and the Computer" seminars, a blurb from the Electro-acoustic Music Association, and a registration form and information for the 1980 ICMC. Also included is an IRCAM concert schedule and some notes concerning a recent M.I.T. Experimental Music Studio concert. Our articles this issue include one from Ron Erickson detailing his proposed hybrid system and one from James Dashow and Goffredo Haus on the Milan conference on music and computers. A product announcement from Digital Music Systems, Inc. is also enclosed. Finally, we have published the amendments to the C.M.A. Bylaws.

It is our intention to have the election of C.M.A.'s Board of Directors completed before the 1980 conference in November. We invite you to submit your nominations, and in our October Issue, we will be enclosing a ballot to our current members. It is the task of the Board to set policy, elect officers and appoint committee members. Following this, the 1st annual membership meeting will be held to discuss C.M.A.'s legal and financial status, to introduce the Board, officers and committees, and to hear suggestions and answer questions concerning C.M.A. and its functions in 1980-1981.

We hope you enjoy this issue --Vol 1, No 3 of The Computer Music Association Newsletter...

Thom Blum
CMA, Newsletter Editor

New Members of the Computer Music Association
July, 1980

Ambrosini, Claudio, Venice, ITALY
Austin, Larry, Denton, Texas, USA
Bales, Kenton, Denton, Texas, USA
Bopp, M. Didier, Geneva, SWITZERLAND
Dal Bianco, Valerio R., Treviso, ITALY
Daniele, Torresan, Venice, ITALY
Doati, Roberto, Genova, ITALY
Drummond, Philip J., New York, New York, USA
Farneda, Stefano, Verona, ITALY
Chent, Emmanuel, New York, New York, USA
Graziani, Mauro, Verona, ITALY
Graziano, Tisato, Padova, ITALY
Haus, Goffredo, Milan, ITALY
Howe, Hubert S., New City, New York, USA
Kleiser, Jon, Oslo, NORWAY
Klouser, Kent, Boalsburg, Pennsylvania, USA
Iagasse, Denise A., Northampton, Massachusetts, USA
Lipkin, Efrem, Berkeley, California, USA
McLean, Bruce, San Diego, California, USA
Mercuri, Rebecca, Horsham, Pennsylvania, USA
Mubonen, Sheri Talbott, Aptos, California, USA
Papadia, Loreto, Rome, ITALY
Parona, Piero, Verona, ITALY
Patella, Gianantonio, Padova, ITALY
Payne, John, Veni-e, California, USA
Pellegrino, Ronald, Lubbock, Texas, USA
Sakamae, Waichi, Tokyo, JAPAN
Smith, Julius, Stanford, California, USA
Snell, John, Atherton, California, USA
Spoerri, Bruno, Zurich, SWITZERLAND
Stein, Jane E., Arlington, Massachusetts, USA
Tarabella, Leonello, Pisa, ITALY
Truax, Barry, Burnaby, B.C., CANADA
Weiss, Daniel, Zurich, SWITZERLAND
Yantis, Mike, Eugene, Oregon, USA
Yob, Gregory, Palo Alto, California, USA

Organizing Committee of C.M.A.

Alphonse, Bo, Montreal, Quebec, CANADA
Battier, Marc, Paris, FRANCE
Beauchamp, James, Urbana, Illinois, USA
Blum, Thomas, Berkeley, California, USA - co-director,
newsletter coordinator, interim president
Byrd, Donald, Bloomington, Indiana, USA
Dashow, James, Padova, ITALY
Grigsby, Beverly, Northridge, California, USA
Cross, Dorothy, Minneapolis, Minnesota, USA
Howe, Hubert S., New City, New York, USA
Kendall, Gary, Evanston, Illinois, USA
Roads, Curtis, Cambridge, Massachusetts, USA - co-director, interim vice-president
Strawn, John, Stanford, California, USA - co-director, interim treasurer

 * Nominations Open for the Computer Music Association
 * Board of Directors
 * *****

Nominations are now open for the first annual election of the Board of Directors for C.M.A. Nominations will close October 5, 1980 and candidates will be announced in the ballot going out in the October Newsletter.

Candidates may be nominated by the C.M.A. nominating committee or by member petition. Any general or student member is eligible to serve on the Board (refer to the amendments of the proposed Bylaws, in this issue of the Newsletter). Petitions must contain valid signatures of two members and be accompanied by the written consent of the nominee. Formal petitions should be mailed to:
 Computer Music Association
 P.O. Box 1634
 San Francisco, CA 94101
 U.S.A.

 * Membership Dues
 * *****

Many of you who have already sent in membership dues are wondering why you have not received your canceled checks, yet. The Computer Music Association is currently undergoing the legal and bank paperwork necessary to have the C.M.A. recognized as a non-profit corporation of the State of California. Until this is complete, no checking account can be opened, hence no membership checks can be processed. Those of you who mailed in your checks more than six months ago will probably be asked to issue new checks once the account is operative. We expect this to happen within the next six to ten weeks and apologize for the inconvenience and redtape.

QUEENS COLLEGE of the City University of New York

NOVEMBER 13-16, 1980

The Department of Music at Queens College of the City University of New York cordially invites you to attend the 1980 International Computer Music Conference to be held in New York City at Queens College in Flushing, New York. The first meeting of the International Computer Music Association will also be held on this occasion. The International Computer Music Conference is the primary annual meeting for persons interested in computer applications in music. Conference activities include presentation of papers, concerts, workshops, panel discussions, meetings of special interest groups, demonstrations, and a special exhibition of computer music equipment. Conference sessions will include the following topics:

synthesis hardware
 synthesis software
 computer composition
 system overviews
 studio reports
 acoustics and psychoacoustics
 sound analysis
 use of computers in musicology
 and music theory
 musical analysis
 musical data structures and input languages

Concerts will feature music composed or generated with the aid of a computer. Special interest groups will be held in topics proposed by participants.

REGISTRATION

The advance registration fee of \$35.00 must be received no later than October 1, 1980, after which time a \$5.00 surcharge will be added. Late registration will take place in the lobby of the Queens College Theatre, located at the corner of the Long Island Expressway and Kissena Blvd., where a registration booth will be maintained during the Conference.

PRESENTATION OF PAPERS OR MUSICAL WORKS

Complete proposals for presentation of papers or musical works for performance at concerts may be submitted until September 15, 1980. PROPOSALS RECEIVED AFTER THIS DATE CANNOT BE CONSIDERED.

* To deliver a paper, send an ABSTRACT describing the subject, length of time requested, and special facilities needed. Most papers will be restricted to a time limit of 20 minutes.

* To submit a composition for performance at one of the concerts, send a score and/or tape of the work (7 1/2 or 15 inches per second, 2-track stereo or 4-track quad, 1/4-inch tape only, on a REEL) together with complete program notes describing the role of the computer in the work. A limited number of performers will be available for instrumental works, as well as electronic playback facilities. Only in unusual circumstances will works longer than 15 minutes be considered. No proposals for incomplete works will be considered.

* To arrange for exhibition space, describe needs. Fees to cover insurance, security guards, and other special requirements will be assessed all exhibitors.

To submit proposals for papers, compositions, or exhibitions, write to:

Dr. Hubert S. Howe, Jr., Director
 1980 International Computer Music Conference
 Queens College
 Flushing, New York 11367

INQUIRIES

The Conference director is Prof. Hubert S. Howe, Jr. of the Queens College Music Department. Information about scheduling or other details may be obtained from the department by calling Gretchen Clumpler at (212) 520-7342. Mass transportation information and a pre-Conference schedule will be sent to registrants after October 15th.

HOTEL ACCOMMODATIONS

The Grand Hyatt New York, a new hotel opening in 1980 near Grand Central Station in downtown New York City, has been selected as the official hotel for the Conference. Special daily rates of \$50.00 per single room and \$60.00 per double room have been obtained for Conference participants. Reservations must be made by October 23, 1980 to obtain these special rates. Participants are advised that November is a particularly busy month for conventions in New York City, and arranging accommodations at other hotels or after this date will be difficult. Transportation from the hotel to the College will be arranged to coincide with the Conference schedule.

Name _____ (Check)
 _____ \$35 regular fee
 Address _____ \$15 student fee

 I wish to participate in special interest groups on the following topics

 Phone _____
 Affiliation _____

Make checks payable to Queens College and mail with this form to Prof. H. Howe, Music Department, Queens College, Flushing, N.Y. 11367

The MIT Press

29 Carleton Street
Cambridge, Massachusetts 02142

Massachusetts Institute of Technology
617-253-5646

11 July 1980

Readers of Computer Music Journal may be wondering about the delay in the appearance of Vol. 4, No. 1 (Spring 1980). Due to a transition to the MIT Press, which has involved a complete redesign of the Journal, and the initiation of a complicated new production process, Vol. 4, No. 1 will be late for a few more weeks. The production people at the MIT Press estimate that it will be ready to mail to subscribers in September. Our special issue of "Artificial Intelligence and Music" [Vol. 4, No. 2 (Summer 1980)] has been submitted to the Press. It is expected that it will appear by December.

Vol. 4, No. 3 is being organized at present. The current plan is to include a sound sheet with each copy of the issue.

Thank you for your patience. We hope to be back on our regular quarterly schedule by early next year.

Regards,

C.M.

C. Roads

Editor

Computer Music Journal

IRCAM Information

COMPOSITIONS REALISEES PAR ORDINATEUR

Comme vous le verrez dans les programmes de la saison 1980/81, l'IRCAM (Paris) organise du 17 au 21 février 1981, une semaine d'ateliers et concerts consacrés au thème suivant : "Le Compositeur et l'Ordinateur".

Au cours de cette période des débats sur divers sujets liés à la composition auront lieu, deux séries de concerts seront données et un ensemble de bandes aussi représentatif que possible du travail effectué dans le domaine de la musique par ordinateur sera présenté au public.

L'IRCAM est, dès maintenant, désireux de se procurer des bandes d'œuvres réalisées à l'aide de l'ordinateur en vue de ces ateliers. Bien que seules des œuvres pour bande puissent être utilisées pendant les manifestations de février, l'IRCAM souhaite également, pour une utilisation ultérieure, recevoir des pièces pour bandes et instruments live.

Vous pouvez envoyer vos bandes, le plus tôt possible accompagnées d'une documentation sur le compositeur et l'œuvre à : Tod MACHOVER, IRCAM, 31, rue Saint-Merri, 75004 PARIS.

CALL FOR COMPUTER COMPOSITIONS

As you will see in the attached programme for the season 1980/81, IRCAM (Paris) is sponsoring a week of seminars and concerts devoted to "The Composer and the Computer" from February 17-21, 1981. During this period, discussions about various compositional issues will be held, two sets of concerts will be given, and a well-documented series of tapes representing an over-view of work in computer music will be presented to the public.

IRCAM is in the process of collecting tapes of works created with the use of computers to be played during this week. Although only works for tape solo are acceptable for the February presentations, IRCAM would be interested in receiving pieces for tape plus several live instruments for performance at a later date. Those wishing to have tapes considered should send them as soon as possible, along with information about the composer and any notes about the work to : Tod MACHOVER, IRCAM, 31 rue Saint-Merri, 75004 PARIS, FRANCE.

...and what is EMAS ?

EMAS, the Electro-Acoustic Music Association of Great Britain, is a national body involving individuals and commercial interests who have a stake in the creation and performance of music using electronics or computers, the manufacture of equipment or recordings, or the publication of music involving tape, synthesizers or live electronics.

The Association is planning to establish in London a Centre of Electro-Acoustic (EA) Music to act as a sound theatre, public education centre, and conference meeting point for industry and creative expertise. The Association will also provide a national focus for international developments, coordinating present research, setting standards for tape production, and researching into new ways of presenting EA music. It can advise the audio industry on effective ways of exploiting new equipment, offer a consultancy service to music publishers and broadcasting companies in performance of new music involving electro-acoustics, and advise record companies on production of EA tapes and discs for commercial release.

These much-needed services will be part of a wider public education programme incorporating library and reference facilities, touring concerts, provision of courses in electronic, electro-acoustic and computer music as well as recording techniques, record production and publication of a periodical and music scores.

Aims:

- To collate and distribute information and tapes, and set up a public information archive;
- To co-ordinate technical specifications and standards among member laboratories and studios, and to encourage collaboration;
- To advise the music industry on repertoire and concert presentation of electro-acoustic music;

- To assist in promoting and extending available courses and facilities for educating the public in the techniques and composition of EA music;
- To promote EA music through concerts, record production and conferences;
- To attract investment for composition and research;
- To establish a national centre for the performance of EA music.

Who can join EMAS ?

MEMBERS

Composers
Arrangers
Performers
Sound Engineers
Concert Promoters
Students
Teachers
Equipment Designers
Record Producers
Film Makers
Choreographers
Sculptors
Laser Technicians
Drama Producers
Software Designers
Listeners
Concert goers

AFFILIATES

Audio industry
Computer industry
Record Companies
Recording Studios
Radio
Television
Universities
Schools
Colleges
Concert societies
Music Publishers
Arts Centres
Advertising Agencies
Film Studios
Theatres
Dance companies

Subscriptions

Membership is £5.00 annually for individuals (£2.00 for students). Group affiliation is available for organisations at an annual subscription from £20.00. A flat-rate subscription of £10.00 per annum is available to individuals and organisations based outside Britain.

(See application form opposite) : 72 HILLSIDE RD.
LONDON N15 6NB



From the News Office
Massachusetts Institute of Technology
Cambridge, Massachusetts 02139
Telephone: (617) 253-2701
Contact: Paula Ruth Korn

July 17, 1980

FOR IMMEDIATE RELEASE

M.I.T. EXPERIMENTAL MUSIC STUDIO
WILL PREMIERE NEW WORKS JULY 28

CONCERT: MUSIC FOR COMPUTER-SYNTHESIZED SOUND
DATE/TIME: Monday, July 28, 1980--8 p.m.
PLACE: Loeb Drama Center, Harvard University
64 Brattle Street, Cambridge, Mass.
PROGRAM: New works by members of the 1980 M.I.T.
Workshop in Computer Music Composition
ORGANIZATION: M.I.T. Experimental Music Studio

The Massachusetts Institute of Technology Experimental Music Studio, Barry Vercoe director, will present a free concert of new music at the Loeb Drama Center, 64 Brattle St., Cambridge, on Monday, July 28, at 8 p.m.

The new works, composed for computer-synthesized sound by members of the 1980 M.I.T. Workshop in Computer Music Composition, will include music using taped sound alone as well as with live performers. Many of the pieces will be programmed for quadrasonic sound.

Members of the M.I.T. Workshop come to the Experimental Music Studio from diverse backgrounds in music composition. The four-week program offers individuals the opportunity to realize complete compositions using M.I.T.'s unique facilities with the assistance of technical staff and visiting composers.

(MORE)

XMUSIC 2-2-2

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Composers attending this year's workshop whose compositions will be heard include Elliot D. Balaban, member, Analytical Services Group, ABT Associates, Cambridge, Mass.; Martin A. Brody, instructor, composition and music theory, Department of Music, Wellesley College, Wellesley, Mass.; Sheree J. Clement, DMA candidate, Columbia University, New York; David C. Freihofner, student in composition, Oberlin Conservatory of Music, Oberlin, Ohio, and a student of Professor Richard Hoffman, who has worked at the M.I.T. Studio as a visiting composer; Gary L. Gosen, graduate, Amherst College, Amherst, Mass.; Byron G. Hermann, teaching assistant, McGill University, Montreal, Quebec; John L. Lunn, Ph.D. candidate, Glasgow University, Glasgow, Scotland; David D. Miller, composer with DINDISC and Virgin Records, London, England; Jeffrey S. Risberg, graduate, Brown University, Providence, R.I. (who will begin graduate work in electrical engineering at Yale University this fall); and Michael A. Turturro, student at Queens College, New York.

Two of the composers are writing works for live performers and electronic tape. Mr. Lunn himself will perform in his composition for computer and piano. Mr. Balaban is writing a musical theater piece, In My Future, which will feature nine-year-old Nancy Anderson, of Needham, Mass., in a singing and dancing role.

This is the third annual Workshop and Summer Concert produced by the M.I.T. Experimental Music Studio. Of last year's concert, a Boston Ledger review bannered, "Computer Musicians Shine in Performance." The critic wrote, "The 10 composers of the Workshop showed their proficiency and originality in a difficult medium." He further described the pieces in the program as "beautiful," "spectacular" and "carefully integrated."

July 17, 1980

The Boston Globe said of one work, "It had the makings of a sonic spectacular...it trafficked knowingly in extremities of volume and pitch, worked with a colorful palette, and successfully evoked a labful of sci-fi tinglers." Of another piece, the review acclaimed "a vivid aural imagination...would have worked equally well as a concise, shapely orchestral tone poem."

This year's composers are using two computers, a PDP-11/50 and a PDP-11/34. The PDP-11/34 was recently added to the M.I.T. Studio through grants in matching amounts from the Digital Equipment Corporation and the National Endowment for the Arts.

The new addition permits composers to listen to digital sound files at the same time the computer is synthesizing other sounds. The second computer is able to handle the high data rate of real-time digital sound as a task separate from time sharing. This allows up to six composers to do efficient digital audio processing under time sharing, while any one of them may be auditioning a sound file independently.

Dr. Vercoe, associate professor of music and technology at M.I.T., says, "Immediate audition also means the composers have the opportunity to consider such aspects as spatial localization and the effect of moving sound sources. The concert in the Loeb Drama Center will be given in four-channel discrete audio, wherein composers can 'place' sounds anywhere in the plane of the four speakers.

"This is a new dimension in structured compositions," he says, "and is proving to be a stimulating one to composers and audiences alike."

--END--

saison 1980/1981

Voici la cinquième saison présentée conjointement par l'IRCAM et l'Ensemble InterContemporain. Elle comprend en alternance concerts et ateliers, où seront jouées — selon une proportion mobile — œuvres du répertoire, reprises et créations.

Pourquoi des ateliers et concerts? Si le concert nous met en présence des œuvres sans qu'il soit besoin d'en parler — après tout, une œuvre doit s'écouter et se prouver valide par l'écoute, et non par d'autres arguments, les arguments du verbe étant parfois les moins convaincants — l'atelier nous fait prendre conscience des questions auxquelles les compositeurs ont à répondre, des interrogations auxquelles l'auditeur se confronte chaque fois que — bonne volonté ou non — il rencontre la musique de notre temps.

Parfois nous éprouvons le besoin d'écouter sans parler; d'autres fois nous voulons écouter et parler. Ainsi se déroule cette saison avec ses alternances de jeu et de divagation...

Parmi les compositeurs sur lesquels se portera notre attention, citons :

Igor Stravinsky avec six programmes — cinq avec l'Ensemble InterContemporain et un avec l'Orchestre National de France — qui s'inscrivent dans l'hommage rendu à ce compositeur par le Festival d'Automne. Karlheinz Stockhausen et György Ligeti auxquels deux concerts de l'Ensemble InterContemporain seront exclusivement consacrés.

Heinz Holliger, avec lequel l'IRCAM ouvrira sa saison, en reprenant le spectacle sur des textes de Samuel Beckett créé au Festival d'Avignon 1980.

John Cage qui donnera à l'IRCAM une création mondiale réservée à l'Espace de Projection.

Des « Animations/Rencontres », en liaison avec plusieurs concerts, favoriseront l'approche des compositeurs et de leurs œuvres.

Les séries d'ateliers seront au nombre de trois, consacrées respectivement aux sujets suivants :

Le Compositeur et l'Ordinateur

L'Oeil et l'Oreille (en co-production avec Radio France)

Les Micro-Intervalles

En outre, l'IRCAM voudrait, à partir de cette saison, commencer à établir un forum permanent de la création, où — sous leur propre responsabilité artistique — seraient rassemblés les différents groupes qui œuvrent, en France ou à l'étranger, à l'édification de la musique contemporaine. Ainsi pourrait être amorcée la réalisation d'un foyer vivant d'information où seraient présentes les forces les plus dynamiques de notre époque, élargissant pour le bénéfice de tous l'horizon quotidien.

Pierre Boulez



chronologie

Ensemble InterContemporain
Souscriptions
8, rue de l'Échelle, 75001 Paris

Dates	Lieux	Orchestre-Direction
Mercredi 19 octobre Jeudi 2 - vendredi 3 samedi 4 - mardi 7 mercredi 8 - 20 h 30	Espace de Projection IRCAM	Va et Vient Pas Mo Spectacle musical de Heinz Holliger
Lundi 6 octobre 20 h 30	Théâtre de la Ville	Stravinsky Musique de Chambre/1 Ensemble InterContemporain Direction : Pierre Boulez
Lundi 13 octobre 20 h 30	Théâtre de la Ville	Stravinsky Musique de Chambre/2 Ensemble InterContemporain Direction : Pierre Boulez
Mercredi 22 octobre 20 h 30	Centre Georges Pompidou	Animation/Rencontre Stockhausen
Lundi 3 novembre 20 h 30	Théâtre de la Ville (Petite Salle)	Stockhausen Ensemble InterContemporain Direction : Karlheinz Stockhausen
Mercredi 5 novembre 20 h 30	Centre Georges Pompidou (Petite Salle)	Animation/Rencontre Stockhausen
Lundi 17 novembre 20 h 30	Théâtre de la Ville	Stravinsky Musique de Chambre/3 Ensemble InterContemporain Direction : Peter Eötvös
Lundi 24 novembre 20 h 30	Théâtre de la Ville	Ensemble InterContemporain Direction : Diego Masson Ives - Globokar - Ingram - Beno - Schönberg
Mercredi 26 novembre 20 h 30	IRCAM Espace de Projection	Forum de la Création Groupe de Musique Expérimentale de Bourges
Vendredi 28 novembre 20 h 30	IRCAM Espace de Projection	Forum de la Création Œuvres électroacoustiques primées au 8 ^e Concours International de Bourges
Mercredi 3 décembre 20 h 30	Centre Georges Pompidou (Petite Salle)	Animation/Rencontre Stravinsky
Lundi 8 décembre 20 h 30	Théâtre de la Ville	Stravinsky Musique de Chambre/4 Ensemble InterContemporain Direction : Pierre Boulez
Mercredi 10 décembre 20 h 30	Centre Georges Pompidou (Petite Salle)	Animation/Rencontre Stravinsky
Lundi 15 décembre 20 h 30	Théâtre Musical de Paris Châtelet	Stravinsky Œuvres théâtrales en version de concert Ensemble InterContemporain Direction : Pierre Boulez



Mercredi 7 janvier Vendredi 9 janvier 20 h 30	IRCAM Espace de Projection	Forum de la Création Ensemble IECM Direction : Paul Méfano
Lundi 19 janvier Mardi 20 - Mercredi 21 Jeudi 22 - Vendredi 23 Samedi 24 18 h 30 et 20 h 30	IRCAM Espace de Projection	Promenade concert Guthrie-Cage
Lundi 2 février 20 h 30	Théâtre de la Ville	Ensemble InterContemporain Direction : Peter Eötvös Xenakis - Lortie - Xenakis - Petrassi - Schönberg
Mardi 17 février Mercredi 18 - Jeudi 19 Vendredi 20	IRCAM Espace de Projection	Panorama des studios européens et américains
Mardi 17 février Mercredi 18 - Jeudi 19 Vendredi 20	IRCAM Espace de Projection	Atelier IRCAM Le Compositeur et l'Ordinateur Harvey - Heiksson - Pasquet
Samedi 21 février 18 h 30	Centre Georges Pompidou (Grande Salle)	Concert de clôture Chowling - Xenakis Ferryhough - Machover
Samedi 21 février 20 h 30	Centre Georges Pompidou (Grande Salle)	Débat public Le Projet artistique face à l'ordinateur Boulez - Chowling - Dufourt - Ferryhough - Machover - Minsky - Xenakis
Jeudi 26 février 18 h 30	Centre Georges Pompidou (Petite Salle)	Animation/Rencontre Sinopoli
Lundi 2 mars 20 h 30	Théâtre de la Ville	Ensemble InterContemporain Direction : Gustave Sinopoli Schrecker - Sinopoli - Cohen - Messiaen
Lundi 16 mars 20 h 30	Théâtre du Rond Point	Ensemble InterContemporain Direction : Juan Pablo Izquierdo Schönberg - Amy - Stravinsky
Mercredi 25 mars 18 h 30	Centre Georges Pompidou (Petite Salle)	Animation/Rencontre Ligeti
Mercredi 25 mars 20 h 30	IRCAM Espace de Projection	Forum de la Création Studio du Centre européen de la Musique
Dimanche 29 mars 18 h 30	Théâtre National de l'Opéra	Ligeti Ensemble InterContemporain Direction : Pierre Boulez
Jeudi 23 avril 18 h 30	Centre Georges Pompidou (Petite Salle)	Animation/Rencontre Pesko
Lundi 27 avril 20 h 30	Théâtre du Rond Point	Ensemble InterContemporain Direction : Zoltan Pesko Busoni/Schönberg Dalapiccola - Murail - de Padoa
Lundi 11 mai 20 h 30	Radio France Grand Auditorium	Cycle IRCAM/ Radio France Atelier : Wolfram Ferryhough-Berg
Mardi 12 mai 20 h 30	Radio France Grand Auditorium	Cycle IRCAM / Radio France Concert Wolfram Ferryhough-Berg Ensemble InterContemporain Direction : Pierre Boulez

Vendredi 15 mai 20 h 30	Radio France Grand Auditorium	Cycle IRCAM Radio France Atelier : Boulez - Carter - Messiaen
Lundi 18 mai 20 h 30	Radio France Grand Auditorium	Cycle IRCAM Radio France Concert Boulez - Carter - Messiaen
Vendredi 22 mai 20 h 30	Radio France Grand Auditorium	Cycle IRCAM Radio France Atelier : Barth - Stockhausen - Beno Orchestre National de France - Santiago B
Lundi 25 mai 20 h 30	Théâtre de la Ville	Atelier Carlos Americanos Ensemble InterContemporain Direction : Dennis Russell Davies Harrison - McPhee Ives - Glass
Mardi 26 mai 20 h 30	Théâtre des Champs-Élysées	Cycle IRCAM Radio France Concert Barth - Stockhausen - Beno Orchestre National de France Direction : Pierre Boulez
Mercredi 3 juin 20 h 30	Centre Georges Pompidou (Grande Salle)	Atelier IRCAM Les Micro Intervalles Hale - Canino Barth - Johnson Atelier IRCAM
Jeudi 4 juin 20 h 30	Centre Georges Pompidou (Grande Salle)	Les Micro Intervalles Ensemble InterContemporain Direction : Peter Eötvös Barth - Maye Dufourt - Xenakis
Mercredi 10 juin 20 h 30	Radio France Grand Auditorium	Shostakovich - Les Noirs Orchestre National de France Direction : Pierre Boulez
Jeudi 11 juin 20 h 30	IRCAM Espace de Projection	Forum de la Création L'itinéraire

Les programmes
contenus dans cette brochure
pourront être modifiés
en cas de nécessité

The following was provided by J. Dashow and G. Haus for distribution in the C.M.A. Newsletter....

Conference on MUSIC AND COMPUTERS:
TOWARD A PERSONAL MUSICAL LABORATORY

On 10 and 11 April, 1980 in Milano, the Federation of Scientific and Technical Associations (FAST) in collaboration with the Cybernetics Institute of the University of Milano held a conference dedicated to exploring ideas concerning the feasibility of a personal digital musical laboratory and to discussing the current state of digital musical synthesis in general. The primary object of the conference was to contribute to the distribution and development of techniques and technology relating to digital musical applications, with particular emphasis on encouraging continued efforts toward low-cost digital musical systems -- the 'personal laboratory'.

Participating research centers included: T. Bolognesi, P. Grossi (from various Institutes of the Italian National Research Council in Pisa and Firenze), J. Dashow and G. De Poli (Centro Sonologia Computazionale, University of Padova), G. Haus (Cybernetics Institute, Milano), G. Nottoli (Corbino Acoustics Institute, Roma), M. Eroni and C. Jacoboni (Universities of Bologna and Modena), G. Di Giugno (IRCAM, Paris).

The participation as well of several musical and cultural institutions gave a wider perspective to the conference, complementing the technical reports with papers concerned with the practical and cultural problems facing the musician today in his attempts to 'go digital' (especially in Italy). These were: A. Paccarnini (Verdi Conservatory of Music, Milano), A. De Santis (Napoli Conservatory of Music), P. Grossi (Cherubini Conservatory, Firenze), T. Ranpazzi (Pollini Conservatory, Padova), A. Vidolin (the Venice Biennale), and L. Alberti (City Theatre of Firenze).

A tape audition offered an panorama of current works for computer. Especially notable from the standpoint of this conference was the wide variety of stylistic approaches to the computer as a new and major musical resource. Pieces included: WINTER LEAVES by Mauro Graziani, IN CELEBRATION by Charles Dodge, A WA OF STAYING by James Dashow, ...OF QUIET DESPERATION by John Melby, DIGITAL TRUTHS N.1 by Tracy Lind Petersen.

Bound copies of the papers presented may be obtained from the conference organizer:

Dr. Goffredo Haus, Istituto di Cibernetica, Via Viotti 5, 20133 Milano, ITALY

HYBRID ELECTRONIC MUSIC SYNTHESIZER

by Ron Erickson May, 1980.

I'm interested in assembling, or if necessary, partially constructing a hybrid synthesizer (digital control of an analog synthesizer). This system will consist of an 'Oberheim' 4-voice polyphonic (analog) synthesizer, an S-100, Z80 based microcomputer, and a suitable analog/digital interface.

The Oberheim synthesizer consists of four synthesizer expander modules (SEMs), a 4-voice polyphonic keyboard, and an output (mixer) module. Each SEM includes two voltage-controlled oscillators (VCOs) which have square/pulse and sawtooth waveforms, one voltage-controlled filter (VCF) which offers low-pass, high-pass, band-reject (notch), and band-pass filter modes and adjustable resonance (Q), one voltage-controlled amplifier (VCA), two ADS envelope generators, and one sine waveform low-frequency oscillator (LFO). I don't have the programmer which is normally included. I have built my own patching control panel which features a 20 x 40 switching matrix (similar to those used on the ARP 2500 synthesizer), and 120 mini-phone jacks which access most control voltage and signal outputs and inputs, and permit extensive external interfacing.

The objective of computer-controlling the instrument is to achieve extensive automatic control of nearly all its functions (voltage-controlled parameters and otherwise). This will allow me control not possible by manual means, even if I had a professional studio to work in. As I own only one 4-track tape deck, being able to record a piece precisely while constantly varying the timbres can only be achieved at the cost of multiple tape regeneration. I could reduce tape regeneration by purchasing a second deck with eight tracks or more. This would make it possible to break a composition down into simpler parts, and therefore allow more attention to be reserved for creative synthesis. Of course I would also need to buy a console to mixdown to 2-channel stereo. This has already amounted to a considerable investment, comparable to that of a microcomputer and at least

a partial interface. Now if I want to control levels, or panning for all channels during mixdown, I need either many hands or automated mixdown. These are only a few of many automated functions possible with a hybrid synthesizer. If I want to edit or change a track on tape I must tape-splice and re-record, respectively, and risk damaging the tape and being frustrated by mistakes during the re-recording of one, or all tracks. Alternately, data which is stored in a computer memory is easily edited or modified. I've only been comparing tape vs. computer as mass storage devices. The computer can also be programmed with numerous control algorithms, which make computer 'composition' possible, albeit that most of the development in music synthesis software caters to direct digital synthesis.

Digital synthesis is an interesting alternative to hybrid synthesis, but this technology is still very young and therefore expensive (eg. 'Synclavier' at approx. \$15,000, or the Fairlight 'CMI' at approx. \$30,000). Although digital synthesizers are potentially far more powerful than any hybrid system, and will eventually become affordable, they are still very specialized, even though they may use standard microcomputer technology. If I'm going to spend a lot on digital hardware, I would prefer to spend it on a general purpose computer, which is hardware and software supported for personal, non music-oriented applications as well.

Not being an electronics engineer, I would prefer to buy than to build, assuming that suitable 'off-the-shelf' components are available for a synthesizer-computer interface, and that they are affordable. I'm seriously considering an S-100 buss system because of the relatively low cost of S-100 boards and because the market offers a wide selection. Unfortunately, I have not, so far, found all of the necessary boards on S-100 or otherwise. Those which are suitable are quite expensive, and to have custom boards built for me would be still more expensive. I'm more interested in applying the hardware creatively than developing it...but I may have no choice.

One means of achieving some automated control, without construction on my part, is to use a digital sequencer and a digital programmer, such as those available from Oberheim. The Oberheim programmer will store 16 programs, which can be recalled at the touch of a button. The range of program content, however, is limited by the fact it cannot control waveform selection or mix, the mix of VCO1 vs. VCO2, selection of filter response or mix thereof, nor filter resonance. The Oberheim DS-2 sequencer can be loaded from the keyboard and can play back faster or slower, but has only three channels maximum, and only 144 note storage. Even these devices, used together, don't allow automatic dynamic variation of programmed sounds, in synchronization with a sequence because the programmer and sequencer functions are not integrated. The Roland 'MicroComposer' is a more powerful interface, but is still fairly limited, while costing as much as a general-purpose microcomputer.

An ideal interface would consist of three sections: analog input, analog output, and an audio mixer. For analog input, a 16-channel, 12-bit resolution (0-10V.) data acquisition board would be appropriate. Fortunately such a board is available for S-100 from California Data Corp. or Tech-Mar. This board will accept analog control voltages from the synthesizer (4 kybd. CVs., 8 env. gens., and 4 LFOs), convert these to digital, and load this data into the memory. In this way the computer serves as a simple storage medium, with the synthesizer's controllers being played in real time. This basic arrangement is the most musically comfortable way (especially the keyboard) to build up the memory file.

The analog output section would apply control voltages to the appropriate voltage-controlled devices of the synthesizer (8 VCO-FM, 8 VCO-PWM, 4 VCF-Mod.). This requires 20 channels, 12-bit resolution, 0-10V. The keyboard gates are not included in the interface because the envelope control voltages which are triggered by the gates are stored instead. These gates could be substituted for other analog channels (actually gates are digital) and are compatible with the analog input and output systems, being +10V. dc.

There are, unfortunately, no S-100 boards with 12-bit resolution, 0-10V., having more than 4 analog output channels (that I know of). The only non S-100 analog output system I know of which offers 20 channels (up to 32) is Datel's System 256, which is very expensive, and so are the computers with which it is compatible. I could buy five 4-channel boards, but the cost would be about \$2,500. Hal Chamberlin, who wrote an article for 'Byte Magazine' (Sept. 77), claims that a 32-channel, 12-bit analog output system could be constructed for as low as \$2.00 per channel. Possibly the difference in cost (a factor of 12) is partly due to the fact that Mr. Chamberlin's design uses a single DAC, an analog 'demultiplexer' and sample/hold amplifiers, whereas the commercially available boards typically use address decoding (digital demultiplexing, if you will) and separate DACs for each output channel.

The final section of the interface would be an audio signal mixer. This would allow control of non voltage-controlled parameters. Multiplying digital to analog converters (M-DACs) can be used as audio attenuators if the signals are applied to the reference voltage inputs, and 'amplitude modulated' by the digital word from a computer output port. Because these are amplitude changes only, 8-bit resolution should be adequate. This mixer would firstly allow independent control of square/pulse and sawtooth waveforms for each VCO. Because there is no noise generator in the synthesizer, an external noise source would be applied to each SEM through four M-DACs and mixed with the VCO outputs. The composite mix of VCO1, VCO2, and noise for each SEM would then be applied to the respective VCFs. In a similar configuration, the low-pass and high-pass outputs of each filter would be controlled, producing a composite 'notch' response when the L-P and H-P filters are in parallel. In order to produce band-pass response, these filters would have to be in series. Switching between parallel and series might be accomplished with relays, but I have ignored this matter in my present design. A similar switching mechanism would also be required to switch VCO2s into sync. with VCO1s. I would also like to use these M-DACs to control filter resonance by placing them in the feedback

paths, to control the amount of regeneration. The final function of the mixer would be to control stereo panning for each SEM. The output of each VCF would be split and applied to two M-DACs, one for left and one for right. The stereo outputs from the four SEMs would then be mixed in the output module. I have bypassed the VCAs and have not provided control channels for them on the interface because amplitude can be totally controlled by the M-DACs, either at the VCO/noise outputs or at the VCF output. The difficulty with the construction of this 'mixer' is that 40 channels are required to do all these things. This means 40 8-bit output ports, the usual maximum per I/O board being eight.

The big area still to be discussed, and that which requires the most development is the software which must control the hardware components of the system. The computer must not only be able to output control voltages and control signal levels, but must do these within the context of a temporal domain - not just the order in which changes occur, but the relative time durations between these events. My approach is to 'scan' the inputs at regular intervals, then read blocks of memory at the same (or different) rate. Each memory block would determine what the synthesizer does from one scan to the next. Only one channel is addressed at any instant, however. In the purely control mode, each of the 60 output channels is addressed, either changed or remaining the same, then the computer goes into a delay subroutine for the balance of the scanning period, then a new scan begins. It is, of course essential that all 60 D/A conversions be completed within the desired scanning period. Assuming that there is a delay period, this period could be shortened to speed up the program, and could be lengthened to slow it down. By this means, the music could speed up in tempo, then slow down without altering the pitches of the notes. A suitable scanning rate is dependent on two opposing factors. It would have to be fast enough to achieve adequate time domain resolution, so that continuously varying pitches, for example, do not sound like a series of quantized jumps in pitch, and so that *rhythm doesn't* become distorted. The fact that 60 channels are being addressed one-at-a-time within each scanning period should not

be significant. For example, the eight VCOs changing pitch one-at-a-time will be perceived as changing simultaneously. The scanning rate is altered only by varying the delay period. The reason for keeping the scanning rate as slow as possible is to conserve memory. Because the 20 analog output channels are 12-bit resolution, double-buffering is used, and two memory locations are required for each of these channels. The total number of memory locations per block is therefore 80. If we assume that the program itself is contained within memory address locations 1 to 1000, then the first memory block containing synthesizer control information might be 1001 to 1080, the next block would be 1081 to 1160, etc.

Because there are 60 devices to be controlled and only 16 analog inputs, the memory will have to be built up from several stages. If I want to control more than one VCO in unison (assuming they are tuned to produced the same pitch when given the same control voltage) using one keyboard CV channel, then the data from one memory address can be written to others in the memory block. Because the 8 VCOs can be controlled independently, pseudo 8-voice polyphony is possible by playing the keyboard to control four VCOs in each of two 'runs'. Similarly the keyboard, envelope generators and LFOs could be used to control all of the output channel devices (to mix waveforms, filters, panning, etc.) Data in memory could be re-routed between memory and output channels, according to a program, for special control possibilities. (in this situation, a given output channel won't necessarily correspond to every 80th memory address). Alternately, the computer can compute values and apply these directly to the output channels.

The problem with this regular interval scanning approach is that many memory locations are wasted when a series of memory locations contain redundant data i.e. the parameter under control remains constant. If I assume that a 50 Hz. scanning rate is suitable, then 64K of memory would only last 16 seconds, assuming that the memory is written to and read from at this same rate. The number of output channels might have to be reduced.

It would also be desirable to access a disk drive for real-time control of the synthesizer. The question is whether or not the disc drive can be synchronized to change tracks during delay intervals, so as to not interrupt the real-time control. Assuming that this is possible, then a quad density floppy disc (5inch, mini) with 315K of storage could run for 79 seconds.

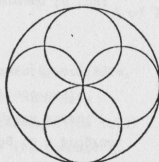
I welcome suggestions regarding both hardware and software approaches that may help me overcome the obstacles I have described. I do anticipate having to compromise the 'ideal system' which I have described, which is nearly ideal only in terms of the extent of its controllable parameters.

Digital Music Systems, Inc.

New Product Release

FOR IMMEDIATE RELEASE:

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DIGITAL MUSIC SYSTEMS INTRODUCES DIGITAL SIGNAL PROCESSOR

BROOKLYN, NY, Oct. 1 -- Using a parallel, pipelined architecture and bipolar chip slice technology, Digital Music Systems has developed a high-speed minicomputer designed especially for audio signal processing. The DMX-1000 Signal Processing Computer is designed to be added as a peripheral to any general purpose computer. The DMX-1000 will do the high-speed repetitive calculation required for the signal processing, and the other computer will control it in real time. Analog audio signals may be input to the DMX-1000 via one or more analog to digital converters. Signals are processed and/or synthesized digitally, and converted to analog form with one or more digital to analog converters. Data paths are 16 bits wide throughout.

The other computer controls the DMX-1000 in real time by providing a microprogram and a set of parameters. The DMX-1000 executes the microprogram repetitively. Each execution takes input samples from the analog to digital converters, processes them, and propagates results to the digital to analog converters. The sampling rate may be varied by changing the program size. A smaller program runs

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at a higher sampling rate. The microprogram may contain as many as 256 instructions. A program this size will run at a sampling rate of 19.3 KHz.

The heart of the DMX-1000 is a 16-bit ALU implemented with 2901 chip slices. It has 17 internal registers and will perform standard arithmetic and logical operations, one operation per 200ns machine cycle. A multiplier will multiply two signed 16-bit numbers, giving a 32-bit product in one machine cycle. A 4K X 16 data memory is used to hold parameters, state variables, and function tables. It can be read or written by the ALU once per machine cycle. Pipelining allows parallel operation of all these units. During the same 200ns machine cycle, the ALU can be adding two numbers, while the multiplier is multiplying two different numbers, and the data memory is fetching a datum. The result is a machine that is several times as powerful in audio signal processing applications as the fastest general-purpose minicomputers at a fraction of the cost. At a 19.3 KHz sampling rate, the DMX-1000 will implement, for example:

- 20 first order filter sections, or
- 10 second order filter sections, or
- 24 table lookup oscillators.

With the optional delay memory, the DMX-1000 can implement complex reverberators and delay lines.

The DMX-1000, due to its programmability and high throughput, is ideal for audio signal processing research. Signal processing algorithms may be implemented in software and tested on the DMX-1000 in real time. This makes them

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easy to change during development. They do not need to be implemented directly in hardware until they are fully tested.

8-bit parallel, S-100, LSI-11 and PDP-11 interfaces are available. Price for the DMx-1000 with one digital to analog converter channel is \$8.995.00 in small quantities. Delivery is 15 weeks.

* The following contains amendments to the *
* Computer Music Association Bylaws: See *
* in particular Article II., Sections 1-5. *

(proposed)
Bylaws
of

Computer Music Associated, Incorporated

ARTICLE I. PURPOSE

The specific and primary purposes for which this corporation is formed are as set forth in Article II of the Articles of Incorporation of the International Computer Music Association, Incorporated, filed in the office of the Secretary of State of the State of California. In addition, this corporation is formed for the purpose of performing all things incidental or appropriate in the achievement of the foregoing specific and primary purposes and shall have other exclusively charitable purposes as the Board of Directors may authorize or approve from time to time, whether related or unrelated to the foregoing specific and primary purposes. The corporation shall hold and may exercise all such powers as may be conferred upon a nonprofit corporation by the laws of the State of California and as may be necessary or expedient for the administration of the affairs and attainment of the purposes of the corporation; provided, however, that in no event shall the corporation engage in activities which are not charitable in nature.

ARTICLE II. MEMBERS

Section 1. Membership

There shall be three classes of members of this association. The first class of members shall be known as general members. The second class of members shall be known as student members. The third class of members shall be known as sustaining members.

Section 2. Qualifications of General Members

The class of general members consists of all who are active in or who maintain an interest in the art and/or science of computer applications to music and the objectives of the Association.

Section 3. Qualification of Student Members

The class of student members consist of those bona fide students who are enrolled in a recognized school, college, or university and

participating in or interested in computer applications to music.

Section 4. Qualifications of Sustaining Members

The class of sustaining members consists of any person, corporation, or organization making annually a substantial contribution to the Association. A substantial contribution is defined as twenty-five dollars (\$25.00) or more.

Section 5. Voting and Other Rights of Members

a) All members, general, student and sustaining, are entitled to all rights and privileges of the Association including the right to vote. Each member is entitled to one vote. All members are eligible for nomination to any of the offices and may serve on Association committees.

b) All members are entitled to receive and to contribute to the Association's newsletter. They are further entitled to contribute to and to utilize the Association's public and private computer music-related archives and directories. The Association treats all information submitted to or distributed from these reference banks as being in the public domain, unless specifically directed to do otherwise by the work's author and/or publisher. The Association is not liable for proprietary material exchanged between members and/or the public.

Section 6. Annual Meeting of the Membership

The annual meeting of the members of this corporation shall be held at such place and during the last quarter of each calendar year or at such other time as may be determined by a resolution of the Board of Trustees. Written notice of the time and place of the annual meeting shall be delivered personally to each member or sent to each member by mail or other form of written communication, charges prepaid, addressed to him or her at the appropriate address as it is shown on the records of the corporation, or if it is not shown on the records or is not readily ascertainable, at the place where the meetings of the members are regularly held. Any notice shall be mailed or delivered at least fifteen (15) days before the date of the meeting.

Section 7. Special Meetings of the Membership

Special meetings of the members of the corporation for any purpose or purposes may be called at any time by the president of the Corporation or by two members of the Board of Directors.

Written notice of the time and place of special meetings of the members shall be given in the same manner as for the annual meeting of the members.

Actions taken at any meeting of the members of this corporation, however called and noticed shall be as valid as though taken at a meeting after regular call or notice if a quorum is present, and if either before or after the meeting, each of the voting members not present signs a written waiver of notice, or a consent to holding this

