DATA COMM
International Microcomputers/
Minicomputers/
Microprocessors/'80

Palais des Expositions, Geneva, 17, 18, 19 June 1980

the Proceedings of an international conference organised by
Kiver Communications S.A.
Surbton, Surrey, England.
SESSION I  COMPONENTS - 16-BIT MICROPROCESSORS/VLSI/CCD AND BUBBLE MEMORIES

Chairman: Marc Zavadil, Digital Equipment Corporation International, Geneva, Switzerland

The ULA, A Bipolar Gate Array for LSI Realisation of High Performance Systems
Stephen R. Slarer, Ferranti Electronics Ltd., Oldham, Lancashire, England

Data Converters and the Microprocessor
Trevor Emmens, Ferranti Electronics Ltd., Oldham, Lancashire, England

Bubble Memories for Program Loaders
John P. Dalton, Plessey Microsystems Ltd., Towcester, Northants, England

The Influence of the Word Length on the Computer Architecture
Wolfgang Beifuss and Manfred Gerner, Siemens AG, Munich, West Germany

SESSION II  STATE OF THE ART IN MICROPROCESSOR LANGUAGES AND SOFTWARE PACKAGES

Chairman: Michael Rooney, Boston Systems Office, Inc., Waltham, Massachusetts, USA

The Impact of High-Level Languages on the Architecture of a Microprogrammed HLL-Microcomputer
Erich Leisch, Siemens AG, Erlangen, West Germany

The STOIC-II Development System

SESSION III  DEVELOPMENTS IN DISTRIBUTED, PARALLEL AND MULTIPROCESSING - I

Chairman: Daniel A. Prener, Lehman College, City University of New York, Bronx, New York, USA

Distributed, Parallel, and Multiprocessing - An Overview
Daniel A. Prener, Lehman College, City University of New York, Bronx, New York, USA

A Multi-Microprocessor System for Communications Network Simulation

Programming of Parallel Processes within a Multi-Microcomputer Architecture
Frank Schmidtke, Siemens AG, Munich, West Germany

Structuring the High-Level Language Software of a Microprocessor Controlled Subscriber Station
J. -P. Behr, J. Kruger, and R. Winter, Philips GmbH, Forschungslaboratorium, Hamburg, West Germany and M. Maisel, TeKaDe Pelten & Guilleaume Gernmeldeanlagen GmbH, Nurnberg, West Germany
SESSION III cont'd.
The OSA Project: Processor Independent Efficient Implementation of Critical Sections on Multi Micro Processor Systems
S. Schindler, H. Marxen, B. Muller-Simmermann and M. Neumann,
Technische Universitat Berlin, West Germany

SESSION V
EUROPEAN DATA COMMUNICATIONS/CURRENT STATUS - TRENDS IN IMPLEMENTATION AND POLICY
Chairman: Louis Pouzin, IRIA, LeChesnay, France
Recent Developments in Data Networks
Louis Pouzin, IRIA, Le Chesnay, France
Concentrator-Type Subscriber Station for a Digital Network with Decentralized Exchange
U. Killat, J. Kruger and D. Riekmann, Philips GmbH,
Forschungslaboratorium, Hamburg, West Germany
SWIFT - User Experience
Michael Harris, Midland Bank Ltd., Sheffield, England
DUNAMET: An Architectural Approach to Network Management
Claude Olier, Dynatech Data Communications Ltd., Rungis Cedex, Paris, France

SESSION VI
ADVANCES IN PACKET SWITCHING NETWORKS
Chairman: Joseph Passafiumi, Digital Equipment Corporation,
Maynard, Massachusetts, USA
Implementation of an Advanced Data Communications Control Procedures (ADDCP) Network
Russell L. Hovey and Don Cote, National Weather Service,
Silver Spring, Maryland, USA

SESSION VII
DEVELOPMENTS IN DISTRIBUTED, PARALLEL AND MULTIPROCESSING - II
Chairman: Daniel A. Prener, Lehman College, City University of New York, Bronx, New York, USA
Decomposition in Quasi Independent Subproblems - The Solution of Large Problems with a Structured Multimicroprocessor System (SMS)
B. Braunleider, Siemens AG, Munich, West Germany
Evaluation Methods and Performance Criteria for Multicomputer Interface Systems
D. Popovic, University of Bremen, West Germany
An Overview of TRACOM-I and TRACOM-II Systems
Andreas Lindner and Manfred Wohrl, Universitat Wien, Austria (Abstract only)
A Microcomputer Communications Adapter for a Time-Sharing Computer System
Marvin C. Woodfill, Arizona State University, Tempe, Arizona, USA
SESSION VII cont'd.

Cooperation in a Multiprocessor System with Private Memories
Wolf-Dietrich Moeller and Gerd Sandweg, Siemens AG, Munich
West Germany

Structuring of Software Components in a Fault Tolerant
Multimicrocomputer System
K. Buchmann, G. Geitz and E. Schmitter, Siemens AG,
Munich, West Germany

SESSION VIII COMPUTER COMMUNICATIONS PROTOCOLS

Chairman: Joseph Passafiumi, Digital Equipment Corporation,
Maynard, Massachusetts, USA

Standard X.25 and KdLC Protocols for Distributed Processing
Systems
J. -G. Gander, Borer Electronics AG, Solothurn, Switzerland

High Level Protocol - Benefits and Implementations
B. A. Graham, PACTEL Ltd., London, England

Comparison Between X25 and Cernet Architectures
C. Piney and F. Fluckiger, European Organization for
Nuclear Research, Geneva, Switzerland

SESSION IX GRAPHICS AND VOICE INPUT/OUTPUT - THE MAN/COMPUTER INTERFACE

Chairman: Stephen Levine, Electronic Graphics Associates, Livermore,
California, USA

A High Resolution Interactive Image Scanner Based on a
Microprocessor
William Simon and Steven Blunemthral, University of
Rochester, Rochester, New York, USA

The Role of Audio Response in Data Collection Systems
Donald B. Kaiserman, Periphonice Corporation, Bohemia,
New York, USA

SESSION XI MICROCOMPUTERS IN REAL TIME INDUSTRIAL APPLICATIONS - I

Chairman: Claude Simpson, Data Applications International,
Brussels, Belgium

New Hierarchical Controls and Data Communications in an
Electric Power System Environment
Dorel J. Damsker, Gibbs & Hill, Inc., New York, New York, USA

Mini/Micro-Based Systems Aboard Space Shuttle
Lawrence B. Perkins, Martin Marietta Corporations,
Denver, Colorado, USA

A Microprocessor-Based Distributed Control, Real Time Monitoring
System
Harold E. Bush, Litton Energy Control Systems, Chatsworth,
California, USA
SESSION XI  cont'd.

Process Control with Microcomputers
F. Huguenin, Swiss Federal Institute of Technology, Zurich, Switzerland

A General Purpose Multi-Processor Robot Controller
C. Marchiando, Insitut de Microtechnique EPF L, Lausanne, Switzerland

SESSION XII  LOCAL NETWORKS AND CORPORATE COMMUNICATIONS APPLICATIONS

Chairman:  Phil Janson, IBM Research Laboratories, Zurich Switzerland

SWAN (Single Wire Advanced Network)
Rene Sommer, Swiss Federal Institute of Technology, Lausanne, Switzerland (Abstract only)

Local Networks in the Kayak Project
Bernard Scheurer, INRIA, Le Chesnay, France

The Operating System Architecture in ERMES - A Microcomputer Local Network
N. Coppo and G. De Grandi, Ispra Establishment of the Commission of European Communities, Ispra, Italy and P. Rossi, Istituto di Cibernetica, University of Milan, Italy

SESSION XIII  STATE OF THE ART IN MICROPROCESSOR SOFTWARE DEVELOPMENT, TEST AND TROUBLESHOOTING EQUIPMENT

Chairman:  Thomas F. McCann, GenRad Ltd., Maidenhead, Berkshire, England

An Intelligent Microprocessor-Based Prom Programmer
David C. Pheanis, Arizona State University, Tempe, Arizona, USA

Fault Diagnosis in Three Main Levels of a Multimicrocomputer System
P. Birzelse, Siemens AG, Munich, West Germany

A Co-ordinated Approach to Microprocessor System Testing
G. C. C. Spring, the Lummus Company, London, England and D. C. Patel, University of Surrey, England

Slave Emulator Concept Allows Real-Time Multiprocessor System Development
Thomas F. McCann, GenRad Ltd., Maidenhead, Berkshire, England (Abstract only)

The OSA Project: RSPL - A Reliable Software Production Language
S. Schindler, Technische Universitat Berlin, West Germany
SESSION XIV  MICROCOMPUTERS IN REAL TIME INDUSTRIAL APPLICATIONS - II

Chairman: Claude Simpson, Data Applications International, Brussels, Belgium

Analog-to-Digital Conversion Based on a Voltage-to-Frequency Converter
J. M. Vandeursen and J. A. Peperstraete, Katholieke Universiteit Leuven, Belgium

Microcomputer Based Power Measurement
M. S. Metwally, M. Fikri and A. Ghalwash, Cairo University, Giza, Egypt

Design and Implementation of Multi-Rate Controller Using Pascal
K. S. Henthorn, Trent Polytechnic, Nottingham, England

A Versatile Computer-Controlled Tensile Tester
Arthur I. Larky, Lehigh University, Bethlehem, Pennsylvania
and Richard G. Fekula, Bell Telephone Laboratories, Allentown, Pennsylvania, USA

Distributed Processing in Building Surveillance
Paul M. Bennett, Vector International, Leuven, Belgium

SESSION XV  HOW TO MANAGE A DATA COMMUNICATIONS SYSTEM

Chairman: Michael Tyler, Tektronix International Inc., Amstelveen, Netherlands

Data Communications System Management
Michael Tyler, Tektronix International Inc., Amstelveen, Netherlands