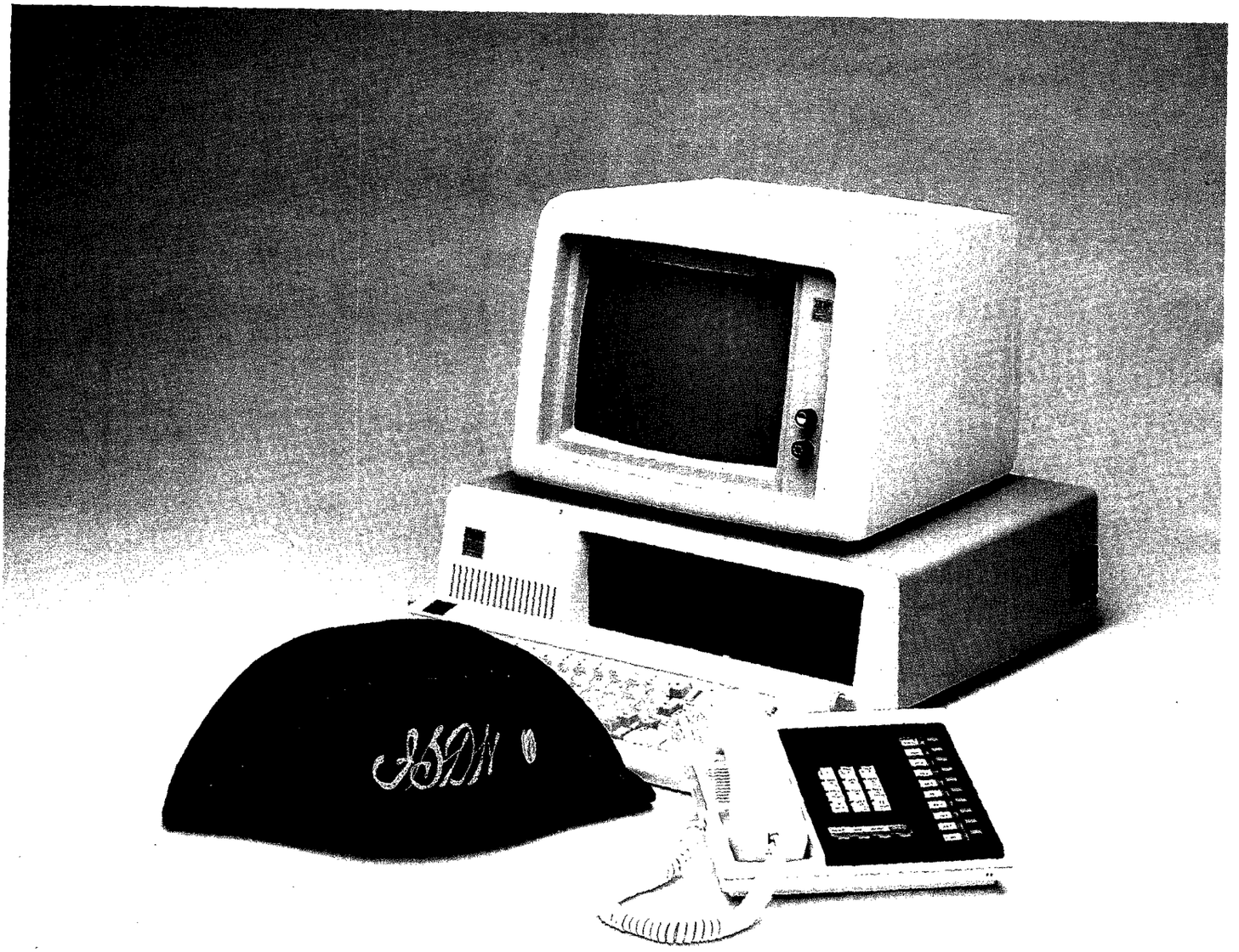


Wanted: Telecommunications Revolutionaries

And everyone who answers this call will be in on the making of telecommunications history. We've already developed the GTD-5 EAX...the shot heard 'round the business world.

But if we're to continue leading the charge, we need brilliant revolutionaries. Like the ones you'll find here. Dedicated, inquisitive people. They not only know how to run with an idea, but how to work shoulder-to-shoulder with their fellow revolutionaries.

Systems Design

We are currently seeking experienced professionals with a BS or advanced degree in Engineering, Computer Science, strong communication and team-playing skills. Specific responsibilities involved and experience required includes:

- Network level architecture design and communication network systems planning. Requires 8-10 years experience with ISDN architecture development, knowledge of CCITT standards, switching/transmission systems planning and open system interconnection.
- Fiber technology systems design background. Requires 5+ years experience with fiber technology systems design. SYTRAN or SONET experience a plus, with MUX/DEMUX concentration.
- Operation system support. Responsible for maintenance, operation and provisioning of telephone operating companies supporting the remote maintenance control system. Minimum 5 years telephony experience in an operations system support environment.
- Microprocessor architecture systems. Requires a minimum of 5 years experience with 80386 or 68020 bit slice processors. Integration and interface design background with I/O and memory subsystems mandatory.

If this describes you, send us your resume. Or give us a call. Just say "I want to enlist." GTE Communication Systems, Human Resources Dept. 0535, c/o 3221 N. 16th St., #106, Phoenix, AZ 85016. An Equal Opportunity Employer M/F/H.

GTE Communication Systems

We're leading the revolution.

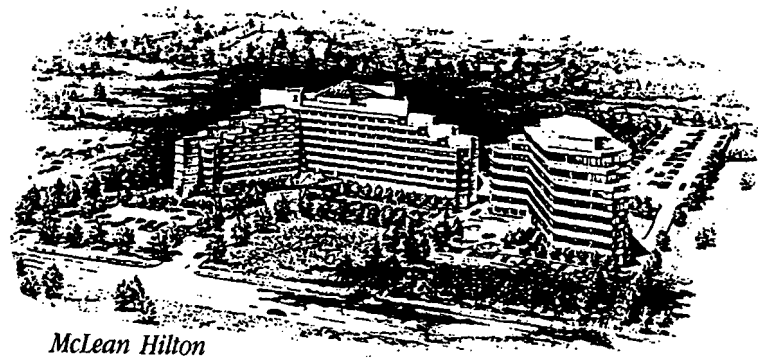
MILCOM 87

"CRISIS COMMUNICATIONS: THE PROMISE AND REALITY"

October 19-22, 1987
McLean, Virginia

Near Washington, DC, in McLean, Virginia, the McLean Hilton will be the site of the 6th Annual MILCOM Conference, jointly sponsored by IEEE, AFCEA and DoD.

The theme of the 1987 Conference is "Crisis Communications: The Promise and Reality." A large audience is expected, providing a unique opportunity for extensive technical exchange among key members of the Military Communications Command.



McLean Hilton

General Chairman:	Alan J. Roberts Senior Vice President & General Manager Washington C³I Division The Mitre Corporation
Vice Chairman:	Stanley E. Harrison President & Chief Operating Officer The BDM Corporation
Vice Chairman:	RADM Lawrence Layman Director, Space, Command and Control Office of the Chief of Naval Operations

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LUNCHEON SPEAKERS:

October 20:
LTG Thurman D. Rogers, USA
Assistant Chief of Staff for Information Management

October 21:
VADM Paul F. McCarthy, USN
Director, Research, Development & Acquisition
Office of the Chief of Naval Operations

October 22:
MajGen John T. Stihl, USAF
Commander, Air Force Communications Command

BANQUET SPEAKER: October 21

Mr. Norman R. Augustine, President & Chief Operating Officer, Martin Marietta Corporation

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PANELS:

October 20:
"Interoperability in a Stressed Environment" (Classified)
BrigGen Wayne E. Schramm USAF

October 21:
"Perspectives on New Directions in Communications Research"
Dr. Gordon K. Soper, DCA

October 22:
"Keeping Information Secure: Policies, Threats, Technologies"
GEN Richard G. Stilwell, USA (Ret.)

For further information or a copy of the Advance Program, please call Leo M. Keane at (703) 883-6993.

MILCOM TECHNICAL SESSIONS

CLASSIFIED:

STRATEGIC COMMUNICATION REQUIREMENTS
THEATER COMMUNICATION REQUIREMENTS
TACTICAL COMMUNICATION REQUIREMENTS
DEFENSE-WIDE COMMUNICATION REQUIREMENTS
STRATEGIC COMMUNICATION SYSTEMS
THEATER COMMUNICATION SYSTEMS
PANEL-INTEROPERABILITY IN A STRESSED ENVIRONMENT
DEFENSE-WIDE COMMUNICATION SYSTEMS
NEW STRATEGIC COMMUNICATION TECHNOLOGY
NEW TECHNOLOGY FOR THE THEATER
NEW TECHNOLOGY FOR THE TACTICAL BATTLEFIELD
INFORMATION SECURITY
NUCLEAR EFFECTS ON PROPAGATION
MULTI-LEVEL SECURITY
DISTRIBUTED SYSTEMS
SATCOM TECHNIQUES
STRATEGIC COMMUNICATION ARCHITECTURES
THEATER COMMUNICATION ARCHITECTURES
TACTICAL COMMUNICATION ARCHITECTURES
DEFENSE-WIDE COMMUNICATION ARCHITECTURES
CRISIS COMMUNICATIONS: THE PROMISE AND REALITY

UNCLASSIFIED:

NETWORK CONTROL AND SECURITY
TERRESTRIAL TRANSMISSION
MODERN TECHNOLOGY
SPREAD SPECTRUM I
ARTIFICIAL INTELLIGENCE
NETWORK PROTOCOLS — THE PROMISE
SATCOM I
ANTENNA TECHNOLOGY
SPREAD SPECTRUM II
COMPUTER AIDED DESIGN OF COMMUNCIATIONS SYSTEMS
NETWORK PROTOCOLS — THE REALITY
SATCOM II
PACKET RADIO TECHNOLOGY
INTEGRATED CIRCUIT TECHNOLOGY
ADVANCES IN CODING
SPEECH PROCESSING
NETWORK SURVIVABILITY
INTEGRATED SWITCHING
MIC/MMIC TECHNOLOGY
SIGNAL IDENTIFICATION AND CLASSIFICATION
ON-BOARD PROCESSING
PANEL — *NEW DIRECTIONS IN COMMUNICATIONS RESEARCH*
INNOVATION IN NETWORKS
MULTI-MEDIA/MULTI-SERVICES NETWORKS
PANEL — *KEEPING INFORMATION SECURE: POLICIES, THREATS, TECHNOLOGIES*
OPTICAL COMPONENTS AND SUBSYSTEMS
PROPAGATION PHENOMENOLOGY
COMMUNICATIONS THEORY
OVERVIEW OF MAJOR TRENDS AND ISSUES

TUTORIALS:

DATA ENCRYPTION AND KEY MANAGEMENT
PROPAGATION IN A NUCLEAR DISTURBED ENVIRONMENT
OVERCOMING NUCLEAR SCINTILLATION IN SATCOM
LOCAL AREA NETWORK PROTOCOLS AND ARCHITECTURES (A, B)

McLean Hilton - McLean, Virginia

1987 IEEE MILITARY COMMUNICATIONS CONFERENCE - OCTOBER 19-22, 1987

REGISTRATION FORM

NAME (MUST MATCH SECURITY FORM) USE BLOCK LETTERS - LEAVE SPACES - DO NOT PUNCTUATE

Last First Middle

Name to Appear on Badge

Mail to: MILCOM '87 Registration Office
The MITRE Corporation
P.O. Box 10264
McLean, Virginia 22102-8264
(703) 883-7900

Company/Organization Title

Division/Operation Area Code Telephone Number

Street No./Post Office Box No. Dept. or Mail Station

City State Country

Zip Code Name of Spouse/Guest for Courtesy Badge

IMPORTANT
Please check all boxes that apply.

☐ A U.S. Citizen	☐ E IEEE Life Member	☐ I Author/Speaker
☐ B DoD Employee	☐ F COMSOC Member	☐ J Session Chairman
☐ C AFCEA Member	☐ G Non-Member	☐ K Session Organizer
☐ D IEEE Member	☐ H Student	☐ L MILCOM '87 Organizer

If Box A above is NOT checked, please provide Country of Citizenship: _____

To assist in the allocation of space and scheduling, please indicate the six (6) events you are most likely to attend.

1. ☐ Network Control and Security
2. ☐ Terrestrial Transmission
3. ☐ Modem Technology
4. ☐ Spread Spectrum I
5. ☐ Artificial Intelligence
6. ☐ Strategic Communication Rqmts
7. ☐ Theater Communication Rqmts
8. ☐ Tactical Communication Rqmts
9. ☐ Defense-Wide Communication Rqmts
10. ☐ Network Protocols — The Promise
11. ☐ SATCOM I
12. ☐ Antenna Technology
13. ☐ Spread Spectrum II
14. ☐ Computer Aided Design of Communication Systems
15. ☐ Strategic Communication Systems
16. ☐ Theater Communication Systems
17. ☐ PANEL—*Interoperability in a Stressed Environment*
18. ☐ Defense-Wide Communication Systems
19. ☐ Network Protocols—The Reality
20. ☐ SATCOM II
21. ☐ Packet Radio Technology
22. ☐ Integrated Circuit Technology
23. ☐ Advances in Coding
24. ☐ Speech Processing
25. ☐ New Strategic Communication Technology
26. ☐ New Technology for the Theater
27. ☐ New Technology for the Tactical Battlefield
28. ☐ Information Security
29. ☐ Network Survivability
30. ☐ Integrated Switching
31. ☐ MIC/MMIC Technology
32. ☐ Signal Identification and Classification
33. ☐ On-Board Processing
34. ☐ PANEL—*New Directions in Communications Research*
35. ☐ Nuclear Effects on Propagation
36. ☐ Multi-Level Security
37. ☐ Distributed Systems
38. ☐ SATCOM Techniques
39. ☐ Innovation in Networks
40. ☐ Multi-Media/Multi-Services Networks
41. ☐ PANEL—*Keeping Information Secure: Policies, Threats, Technologies*
42. ☐ Optical Components and Subsystems
43. ☐ Propagation Phenomenology
44. ☐ Communications Theory
45. ☐ Strategic Communication Architectures
46. ☐ Theater Communication Architectures
47. ☐ Tactical Communication Architectures
48. ☐ Defense-Wide Communication Architectures
49. ☐ Overview of Major Trends and Issues
50. ☐ Crisis Communications: The Promise and Reality
51. ☐ Tutorial — *Propagation in a Nuclear Disturbed Environment*
52. ☐ Tutorial — *Data Encryption & Key Management*
53. ☐ Tutorial — *Overcoming Nuclear Scintillation in SATCOM*
54A ☐ Tutorial — *Local Area Network Protocols & Architectures: Part A*
54B ☐ Tutorial — *Local Area Network Protocols & Architectures: Part B*

TO REGISTER FOR CLASSIFIED SESSIONS,
CALL 703/883-7900 TO OBTAIN FORM.
DEADLINE FOR SUBMITTING CLEARANCE FORM IS 9/11/87.

	REGISTRATION FEES (Before Sept. 11)	(After Sept. 11)	TOTAL
DoD/AFCEA/IEEE MEMBER REGISTRATION (FEE FOR CLASSIFIED SESSIONS NOT INCLUDED)			
☐ FULL - Includes All Sessions, Conference Record (1), Luncheons (3), Air and Space Museum Buffet (1), & Banquet (1)	$335	$385	$ ____
☐ LIMITED - Includes All Sessions & Conference Record	$195	$245	$ ____
☐ ONE DAY - Includes Sessions Associated with Date(s) Below & Conference Record			
☐ Tues., Oct. 20 ☐ Wed., Oct. 21 ☐ Thurs., Oct. 22	$95/day	$100/day	$ ____
NON-MEMBER REGISTRATION (FEE FOR CLASSIFIED SESSIONS NOT INCLUDED)			
☐ FULL - Includes All Sessions, Conference Record (1), Luncheons (3), Air and Space Museum Buffet (1), & Banquet (1)	$385	$435	$ ____
☐ LIMITED - Includes All Sessions & Conference Record	$245	$295	$ ____
☐ ONE DAY - Includes Sessions Associated with Date(s) Below & Conference Record			
☐ Tues., Oct. 20 ☐ Wed., Oct. 21 ☐ Thurs., Oct. 22	$95/day	$100/day	$ ____
STUDENT REGISTRATION (FEE FOR CLASSIFIED SESSIONS NOT INCLUDED)			
☐ ONE DAY - Includes Sessions Associated with Date(s) Below			
☐ Tues., Oct. 20 ☐ Wed., Oct. 21 ☐ Thurs., Oct. 22	$25/day	$30/day	$ ____
ADDITIONAL FEE - CLASSIFIED SESSIONS			
☐ Clearance Required. Security Clearance Form Must be Received by September 11, 1987. Foreign Nationals will *not* receive a Classified Conference Record	$50		$ ____
ADDITIONAL FEE - OPTIONAL TUTORIALS (LIMITED ATTENDANCE)			
☐ No. 1 - Data Encryption & Key Management (Half Day)	$40	$50	$ ____
☐ No. 2 - Propagation in a Nuclear Disturbed Environment (Half Day).	$40	$50	$ ____
☐ No. 3 - Overcoming Nuclear Scintillation in SATCOM	$40	$50	$ ____
☐ No. 4 - Local Area Network Protocols & Architectures (Full Day)	$60	$75	$ ____
ADDITIONAL FEE - EXTRA CONFERENCE RECORD			
☐ Extra Conference Record	$35	$35	$ ____
☐ Shipping of Conference Record (Optional) (Surface Mail - N. America)	$9	$9	$ ____
LUNCHEONS, DINNER & BANQUET (INCLUDED IN FULL REGISTRATION FEE) Guests & Associates are Welcome			
☐ Mon. Evening, Oct. 19 - General Reception			No Charge.
☐ Tues., Oct. 20 - Luncheon with Speaker	____ @ $20		$ ____
☐ Tues., Oct. 20 - Air & Space Museum Buffet (Limited Attendance).	____ @ $40		$ ____
☐ Wed., Oct. 21 - Luncheon with Speaker	____ @ $20		$ ____
☐ Wed., Oct. 21 - Chairman's Banquet with Speaker	____ @ $40		$ ____
☐ Thurs., Oct. 22 - Luncheon with Speaker	____ @ $20		$ ____

Guest activities available at MILCOM '87 described on Page 14 of the Advance Program. Please check here if interested in attending.

Tuesday - "A Tour Through the Technology Forest" ..... No Charge.
- ☐ 9:30 a.m. - 11:30 a.m.
- ☐ 2:30 p.m. - 4:30 p.m.

Wednesday - Workshop: "Appreciating Differences: An Understanding of Personality Type" ..... No Charge.
- ☐ 9:00 a.m. - 11:30 a.m.

Wednesday - Old Town Alexandria Shopping Trip
- ☐ 1:30 p.m. - 5:00 p.m. ____ @ $10 $ ____

For special dietary requirements or disability needs, include a separate letter with Registration Form.

TOTAL REMITTANCE (in U.S. Dollars) ..... $ ____

Enclosed is my
- Personal Check for $ ____
- Company Check for $ ____
- Bank Check for $ ____

(U.S. Funds Only)
MAKE CHECKS PAYABLE TO: MILCOM '87

Please charge to my
- ☐ MasterCard
- ☐ VISA
- ☐ AMEX

Card Number

Expiration Date | Authorized Signature | For Office Use Only

MAIL COMPLETED REGISTRATION FORM TO: MILCOM '87 Registration Office, The MITRE Corporation, P.O. Box 10264, McLean, Virginia 22102-8264. Upon Receipt of the Registration Form, an acknowledgment will be mailed to each registrant. If you have any questions, please call (703) 883-7900.

MILCOM 87

SECURITY CLEARANCE FORM

1987 IEEE MILITARY COMMUNICATIONS CONFERENCE - OCTOBER 19-22, 1987
DoD Sponsored Classified Sessions

Attendance is restricted to individuals possessing a current and valid Government granted Security Clearance of at least FINAL SECRET or its reciprocal equivalence, and a need for access to classified information.

FORMS RECEIVED AFTER September 11, 1987 WILL NOT BE ACCEPTED. Hand-carried clearances and registrations will not be accepted.

Attendance by U.S. Contractor personnel is governed by the provisions of the Department of Defense Industrial Security Manual for Safeguarding Classified Information. (DoD 5220.22-M) (ISM)

NOTE PENALTY FOR MISREPRESENTATION: Title 18, United States Code 1001, makes it a criminal offense, punishable by a maximum of 5 years imprisonment, $10,000 fine, or both, to make a false statement of representation to any Department or Agency of the United States as to any matter within the jurisdiction of any Department or Agency of the United States. This includes any statement knowingly made by employer or employee herein which is found to be incorrect, incomplete, or misleading in any important particular.

ALL PARTS OF THIS FORM MUST BE COMPLETED IN TYPE OR PRINT.

PERSONAL DATA - To Be Completed by Attendee

LAST	FIRST	MIDDLE INITIAL
RANK/TITLE		
SOCIAL SECURITY NO.		
BIRTH DATE		
BIRTH PLACE		
COUNTRY OF CITIZENSHIP		

1¼" x 1¼" 1¼" x 1¼"

PHOTOGRAPHS

Please furnish two identical photographs

PERSONNEL & FACILITY CLEARANCE DATA - To Be Completed By Facility Security Officer

APPLICANT'S SECURITY CLEARANCE LEVEL
DATE GRANTED
GRANTING AGENCY

FACILITY EMPLOYER'S NAME & ADDRESS

FACILITY CLEARANCE LEVEL
DATE GRANTED
GRANTING AGENCY
FSC NO.

COGNIZANT SECURITY OFFICE - NAME & ADDRESS

As Security Officer I hereby certify that the foregoing information is true and correct.
SIGNED: _____

NAME	PHONE

NEED-TO-KNOW CERTIFICATION - To Be Completed By Government/Project Contracting Officer

I hereby certify that attendance is necessary in the interests of U.S. National Defense, and that the attendee has a need-to-know with work being performed under, or in connection with, a U.S. Government or User Agency Program.
REF: Par 9f, ISM

NAME/ADDRESS/PHONE NO. OF AUTHORIZING AGENCY

SIGNED _____

NAME

Ensure that all appropriate items, including signatures and photographs, are complete before mailing these forms.

Please mail completed Security Clearance form to:

MILCOM '87 Security Office
The MITRE Corporation
P.O. Box 10264
McLean, Virginia 22102-8264
(703) 883-6462

An acknowledgment will be mailed upon receipt of the completed Security Clearance Form.

THIS FORM IS FOR THE USE OF REGISTRANTS WHO HAVE BEEN GRANTED A CLEARANCE BY THE U.S. GOVERNMENT. SPECIAL REQUIREMENTS FOR FOREIGN NATIONALS ARE DETAILED ON PAGE 12.

IEEE GLOBAL TELECOMMUNICATIONS CONFERENCE

NOVEMBER 28 – DECEMBER 1, 1988

DIPLOMAT HOTEL
HOLLYWOOOD, FLORIDA

"COMMUNICATIONS FOR THE INFORMATION AGE"

CALL FOR PAPERS

Authors,

You are cordially invited to submit an original paper for consideration for GLOBECOM '88 to be held from November 28, 1988, to December 1, 1988, at the Diplomat Hotel in Hollywood, Florida. Authors are encouraged to submit papers addressing the conference theme *"Communications for the Information Age"* and the mini-theme *"The Dawning of Broadband Communications."* The conference will be structured to follow three tracks of general interest. These tracks along with examples of topics covered under each track are as follows:

I. Services and Trials

- ISDN
- Broadband
- Intelligent Networks
- Private Networks
- Voice/Data/Image Applications
- Voice and Storage Processing
- New Terminal Capabilities
- Office Automation

II. Architecture and Standards

- Open Architectures
- Data Networks
- ISDN Evolution
- Advances in Communications Protocols
- Programming Capabilities for Networks
- Distributed Network Architectures
- Customer Network Management
- Quality Assurance
- Operations

III. Techniques and Technologies

- Optical Communications
- Advances in Switching Technology
- LAN, MAN, WAN
- Portable Communications
- Communications Software
- Coding and Modulation Techniques
- Expert Systems
- VLSI for Communications

Schedule and Instructions

• Complete Manuscript Due	April 18, 1988
• Notification of Acceptance Mailed	July 11, 1988
• Camera-Ready Copies Due	August 22, 1988

The title page must include the author's name, complete return address, telephone and/or telex number and abstract (100 words). Also, please suggest a track number (e.g., I, II or III) for your paper and indicate if the paper addresses the conference mini-theme. All other pages should bear the title of the paper and the author's name. Manuscript must be limited to 3,000 words in English. Page charges will be assessed for camera-ready copies exceeding five pages. Six double-spaced copies in English must be sent to the GLOBECOM '88 Technical Program Chairman. Also, one copy must be sent to the appropriate regional representative shown below. Please make plans to participate in GLOBECOM '88.

ICC GLOBECOM ®

Ray R. Laane
GLOBECOM '88 Technical Program Chairman
Bell Communications Research
435 South Street, Room 2F-287
Morristown, NJ 07960
PHONE: (201) 829-4064
TELEX: 275-209

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Telex: 21 31048

Asia & Pacific
Dr. M. Shinji
NTT Elec. Comm. Lab.
P.O. Box 8, Yokosuka
238 Japan
Phone +81 468 59 3200
Telex: 03852480 YECLJ

CALL FOR PAPER

The 4th IEEE International Workshop on Telematics (IWT)

Sponsored by:

IEEE Communications Society
Societe des Electriciens et Electroniciens (SEE)
Direction Generale des Telecommunications (DGT)

OBJECTIVE

The workshop is an opportunity for researchers to present latest results and discuss the evolution of telematic and message handling services for existing networks and evolving ISDN and broadband ISDN.

SCOPE

The areas of interest include:

- Facilities and protocols for telematic services and message handling services
- Document architecture (ODA, Multi-media) and manipulation facilities
- PC communication and electronic mail
- Integration of telematic services and message handling services in the network (ISDN, Value Added Network)
- New telematic services (wideband, teleconferencing)
- Security aspects in telematic services
- Experimentations and implementation plans for services

WORKSHOP SCHEDULE

Date: MAY 1–4, 1988

Location: Hotel MERCURE
Caen, France

AUTHOR SCHEDULE

October 15, 1987: An abstract of 500-1000 words must be received

INSTRUCTION

The accepted abstract will be distributed as work note. Attendance will be limited to 100; selection will be based on the proposed contribution. The title page will indicate the authors name, company, full address, telephone number, possibly telex and facsimile numbers.

SUBMISSION

Mail 2 copies of the abstract to:

Dr. C. N. Judice
Bell Communications Research
435 South St., Room 2A-287
Morristown, NJ 07960
USA

Call for papers

MILCOM 88

1988 IEEE Military Communications Conference
October 23-26, 1988
Irvine, California

21st Century Military Communications—What's Possible?

You are invited to submit a classified or unclassified paper for the 1988 IEEE Military Communications Conference on one or more of the following topics.

Emerging challenges
Threats: needs requirements, doctrine
Strategic: theater, tactical, defense-wide
Survivability: security, reliability, maintainability, interoperability, cost

Emerging architectural concepts
Systems, subsystems, networks
Land, sea, air, satellite, hybrid

Emerging techniques
Spread spectrum, LPI, coding, processing, modeling, protocols, switching, communications theory

Emerging technologies
Antennas, MIMIC/RFLSI, VHSIC/UHSIC, wafer scale integration, GaAs, HEMT, fiber optics, optical processing, optical computing, solid state power, computer communications, software, and AI.

If you intend to submit a paper, or wish to organize a session, please mail the following form by December 1, 1987.

Author's Schedule
Notice of intent due: December 1, 1987
Papers and abstracts due: February 15, 1988
Author notification: May 15, 1988
Camera ready copy due: July 15, 1988

All abstracts must be less than one page, properly approved, and cleared as UNCLASSIFIED. Include name, affiliation address, and phone number for each co-author. All classified papers presented at MILCOM '88 must be releasable at the secret level or below, and must be preapproved by the author's cognizant security release authority. Page charges will be assessed if the camera ready copy exceeds five pages. For additional information on submissions or the conference, contact:

Ralph E. Osborne
MILCOM '88 Executive Assistant
213.535.5885

Address all submissions to:

Dr. Ronald D. Sugar
MILCOM '88 Technical Program Chairman
TRW
One Space Park, 146/1515
Redondo Beach, California 90278

Sponsored by IEEE Communications Society, AFCEA, and DoD.

MILCOM '88 October 23-26, 1988 Irvine, California
1988 IEEE Military Communications Conference

I intend to ☐ submit a paper, ☐ organize a session on the subject:

_____

Paper/session will be ☐ Unclassified ☐ Classified	Please send ☐ Program and registration information
Name	Title
Address	City State Country
Zip Code	Phone Number ( )

MITRE's Network Center:

At the Forefront of Networking Technology.

The Network Center of The MITRE Corporation's C³I Group in Bedford, Massachusetts, has already made a significant impact on networking technology, especially in the areas of broadband networks, interoperability, generic network management tools for multi-vendor environments, and network security. Now, our systems engineering involvement in almost 20 high-level LAN and Wide Area Network projects promises to set the direction for networking and communications technology well into the 21st century.

MITRE's charter is to serve as the C³I Systems Engineer for the U.S. Air Force's Electronic Systems Division. We established The Network Center to be the central resource supporting the design and development of networks used to solve problems in numerous distributed support and C³I systems. Our LAN/Wide Area Network projects apply to such areas as command and control, surveillance and warning, intelligence and logistics. We are solving distributed processing problems using networking technology for communications, laying the groundwork for totally distributed systems based on standard protocols—reliable, secure, flexible, survivable networks and the application of powerful workstations to provide needed capabilities.

One of the center's projects is aimed at the implementation of five networks-each providing base-wide communications for 7,000 to 10,000 subscribers housed in up to 50 buildings. In another project we are proposing and evaluating alternative network architectures and estimating the performance for end-to-end communications for NASA's Space Station. Other activities involve linking large distributed systems to wide area networks; off-loading functionality from DBMS-oriented mainframes to powerful, sophisticated workstations; developing multimedia (voice, data, graphics) networks; defining network and workstation security solutions; and evaluating applicability and performance tradeoffs among Arpanet, ISO, and proprietary solutions to network problems.

The Network Center places substantial emphasis on enhancing our reputation on a national level by designing and developing creative solutions that involve concept development, feasibility analysis, prototype development, consultation for integration, as well as guidance for development. The experts who staff the organization work beyond the leading edge of networking technology, with the innovators among network product and workstation vendors, and receive the visibility and recognition that match the importance of their contributions.

Technical Leaders—Networking

We need senior technical people for both the management and the technical ladder to help set the direction in system engineering of network architectures. We work with wide-area and local-area networks, requiring expertise in one or both of these fields. Specific responsibilities will include providing engineering support to the analysis and design of computer communications networks, establishing the trade-offs involved in different networking technologies as applied to specific applications, and defining network architectures which will support analytical and simulation efforts. To qualify, you should have a BS/MS, and at least 10 years of experience. A strong background in communications systems, protocols, software development, and commercially available network architectures is required. Effective management experience in defining tasks, producing products, leading engineers, and satisfying the customer within schedule is essential. Familiarity with state-of-the-art and emerging technologies such as T-1 networking, FDDI, and ISDN is desirable, as is experience in modeling and simulation.

Technical Leaders—Workstation/Distributed Applications

We seek leaders with a recognized technical background who can lead a dynamic team to work on areas addressing the close coupling that exists between LANs and the distributed information system environments they commonly support. Your specific, current responsibilities will involve trade-offs among SUN class vs. Apple Macintosh II vs. IBM/Microsoft environments; the applicability of network windowing concepts and network file system concepts to distributed C³I systems; and the applicability of commercial office automation products to C³I applications. To qualify, you should have a BS/MS and at least 10 years of directly related experience. Excellent interpersonal, communications, and leadership skills are essential.

If interested and qualified, please reply in strictest confidence to: David L. Finnegan, The MITRE Corporation, 4608 Middlesex Turnpike, Bedford, MA 01730. U.S. Citizenship is required for all positions.

For C³I and Civil systems engineering positions at MITRE's Washington, D.C. Center, forward resume to: M. X. Mason, The MITRE Corporation, 7525 Colshire Drive, McLean, VA 22102.

Real World Solutions
To Real World Problems

MITRE

An Equal Opportunity Employer M/F

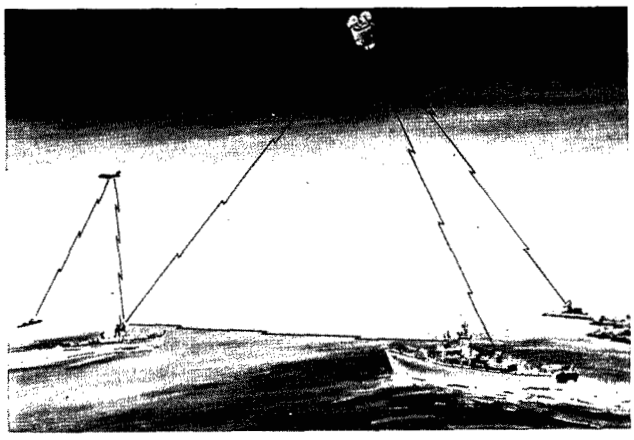
Research and Management Opportunity in Transmission Technology

U.S. Naval Research Laboratory
Information Technology Division
(GM-15; salary to $69,976)

The Naval Research Laboratory has a long and distinguished history in the field of RF technology spanning over 60 years, from the development of the first HF transceiver in 1924 to advanced communication capabilities exploiting space assets. Today our Information Technology Division (ITD) is at the forefront of research and development in telecommunication and computer science, providing leadership in a diverse research environment. The ITD needs an innovative manager to plan, guide, and administer research programs as the Head of the Transmission Technology Branch. This Branch is concerned with radiofrequency system engineering, transmission technology investigations, development of state-of-the-art transmission equipment, and research into channel propagation phenomena. Areas of activity include:

- RF Transmission Technology
  - — Broadband Antennas
  - — Compact Antenna Arrays
  - — Ultralinear Amplifiers
- Arctic Communication Investigations
- Advanced Shipboard/Shore Based Instrumentation
- HF Propagation Channel Characterization

The ITD computing facilities include several VAXs, Gould/UNIX, several LISP machines, SUN and ISI workstations, a Butterfly, numerous PCs, access to NRL's CRAY X-MP/24 supercomputer, a CONNECTION machine, and others.



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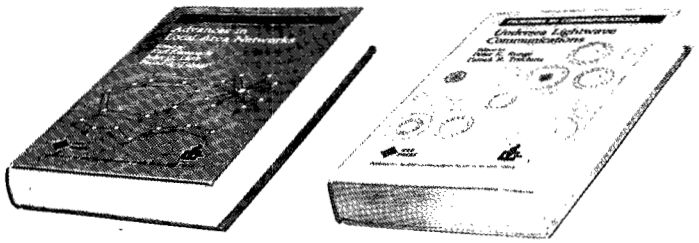

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Advances in Local Area Networks

Edited by Karl Kümmerle, IBM Research Laboratory, Zurich, Switzerland; John O. Limb, Hewlett Packard Laboratories, Great Britain; and Fouad A. Tobagi, Stanford University. 1987. 616 pages. ISBN—0-87942-217-3.

Local Area Networks (LANs) are evolving rapidly and can take many forms. First generation LANs operating at speeds up to 10 Mb/s are widely deployed in office environments today. Second generation LANs and Metropolitan Area Networks (MANs) operating at about 100 Mb/s are the subject of current standardization efforts and third generation LANs operating in the Gb/s region are the object of current research.

The editors of this book point out that Local Area Networks differ from classical communications channels, in that firstly, the transmission medium is shared by a number of users and, secondly, that at least some of the information is sent in packets containing a destination address. These two properties are also shared by many MANs. LANs and MANs exploit similar concepts, the primary difference being in the geographical coverage provided.

The book provides a description of the most important principles of LANs, and emphasizes the exciting new directions LAN technology is taking.

Contents: *Introduction; Evolution of Local Area Networks; Fiber Optics Applied to LANs; Performance; Integrated Traffic; Bridges and Gateways; Software and Applications; Subject Index.*

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Undersea Lightwave Communications

Edited by Peter K. Runge and Patrick R. Trischitta, AT&T Bell Laboratories. 1986. 644 pages. ISBN—0-87942-201-7.

Lightwave systems are being installed on land at a phenomenal pace. Initial considerations might suggest that it would be a relatively easy task to apply terrestrial optical technology to crisscross the world's oceans and seas. This is far from true. The technology necessary for an undersea lightwave communication system is very different from that for terrestrial systems and is very complex and demanding.

The book provides a comprehensive description of the latest worldwide progress in undersea lightwave technology for transoceanic communications systems. It also offers an outlook on future technology options.

Contents: *Background; Undersea Lightwave Systems; Undersea Fiber; Undersea Fiber Cables; Undersea Lightwave Repeater Design; Undersea Electrical Components; Undersea Optical Devices; Assuring the Reliability of Undersea Electrical and Optical Devices; Supervisory, Control, and Terminal Equipment; Future Undersea Lightwave Systems; Author and Subject Indexes.*

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International Conference Center Kobe • Kobe, Japan
June 19-24, 1988

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First Call for Papers

The 1988 IEEE International Symposium on Information Theory will be held at International Conference Center Kobe in Kobe City, Japan, from Sunday evening, June 19th, 1988 through Friday afternoon, June 24th. Hotel accommodations have been arranged in the vicinity of I.C.C. Kobe, at which the technical sessions will be held. Kobe is easily accessible from Osaka International Airport. The Symposium registration fee will be in the neighborhood of ¥ 30,000. Detailed information on accommodations, travel arrangements, excursions, and the technical program will be included in subsequent mailings.

Papers presenting new results in the following areas are solicited:

- Audio and visual signal processing
- Communication systems
- Complexity
- Cryptography and security
- Data networks
- Detection and estimation
- Distributed information processing
- Error-correcting coding
- Information theory applications
- Multi-user information theory
- Pattern recognition
- Shannon Theory
- Stochastic processes
- Source coding

Both long (40 minutes) and short (20 minutes) papers will be accepted. Long Papers will be reviewed on the basis of a complete manuscript; the deadline for submission of these is **November 1st, 1987**. Short Papers will be reviewed on the basis of a 500 word summary; the deadline for submission of Short Papers is **December 1st, 1987**. Either type of submission should be accompanied by an Abstract of no more than 180 words suitable for the Symposium Proceedings, and an indication of the technical area covered. A manuscript submitted as a Long Paper, but which cannot be accommodated in that category, will be considered for acceptance as a Short Paper, unless the author directs otherwise. Acceptance will be by March 15th, 1988. All submitted papers and summaries should be sent in triplicate to one of the Program Co-Chairmen:

Professor Shu Lin
Department of Electrical Engineering
University of Hawaii at Manoa
Holmes Hall 483, 2540 Dole Street
Honolulu, Hawaii 96822
U. S. A.

Professor Suguru Arimoto
Faculty of Engineering Science
Osaka University
Toyonaka, Osaka 560
Japan

A limited number of grants are available for authors of accepted papers whose resources will not enable them to attend the Symposium.
Inquiries on other matters related to the Symposium should be addressed to one of the Symposium Co-Chairmen, Professors Daniel J.Costello, Jr. or Toshihiko Namekawa, or to the Chairman for Local Arrangements, Professor Tadao Kasami, at the following addresses;

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Department of Electrical Engineering
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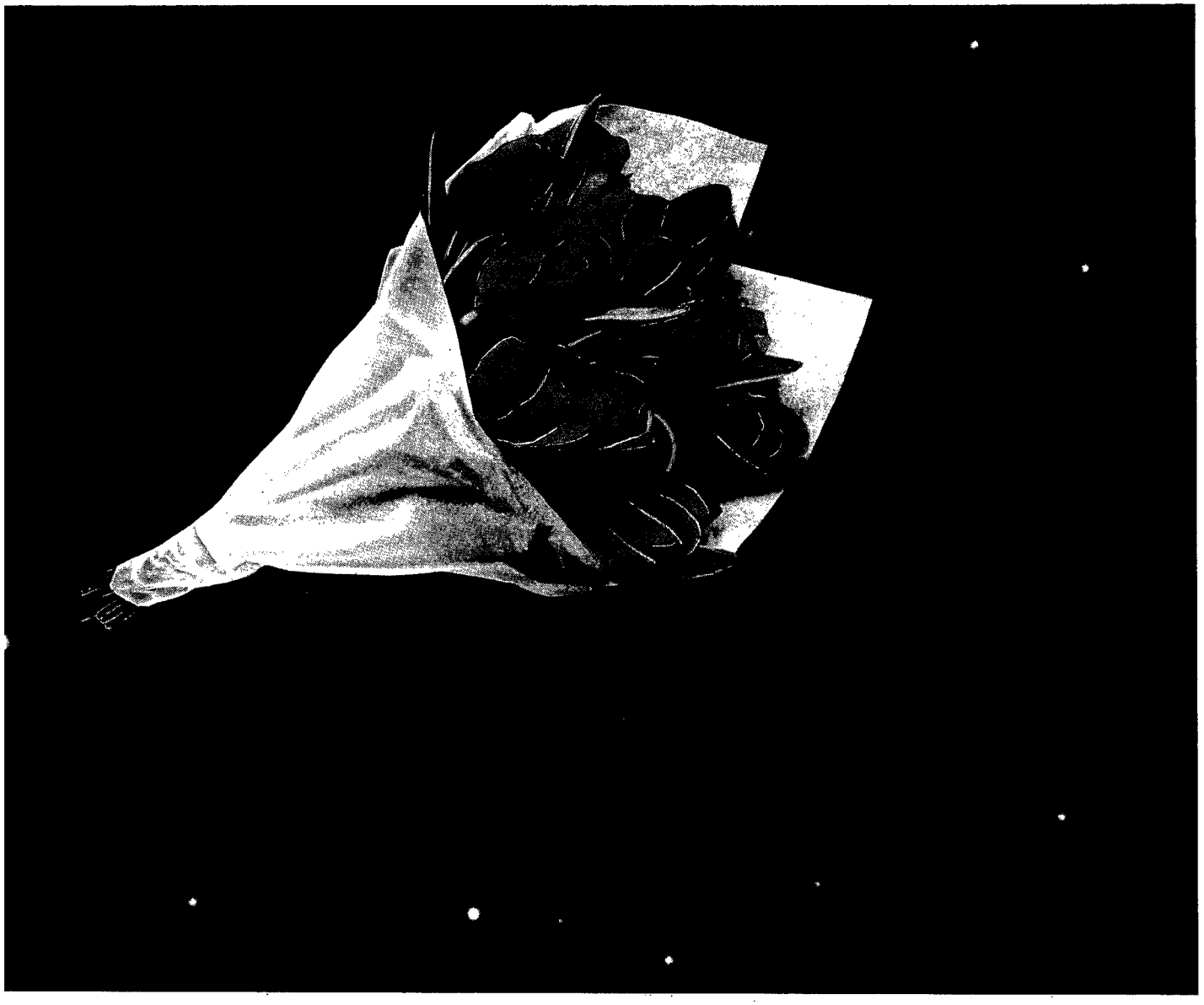

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Call for Papers

IEEE Network Magazine Special Issue on Communications for Manufacturing

A special issue of IEEE Network Magazine on Communications for Manufacturing is planned for May 1988. The major objectives are to provide an informative overview of the general area of factory and integrated office/factory communication systems and to identify major research and development issues. Papers are solicited in, but not limited to, the following areas:

- Strategic importance of factory and integrated office/factory communications
- Functional requirements for automated manufacturing; e.g. production control, file transfer, real-time scheduling, etc.
- CIM: computer integrated manufacturing perspectives
- Computer Aided Logistics (CAL)
- Processing systems and languages for factory communication and control
- Performance requirements, protocols, and system evaluation
- Standards activities
- VLSI for factory communication
- Transmission technology and media for factory communications
- Research directions/results, including modeling, for factory communications

The editors seek original contributions describing case studies, tutorials, research activities and results, and recent developments in software and hardware relevant to factory and integrated office/factory systems.

Schedule and Instructions

All papers will be refereed. Papers should be limited to twenty double-spaced typewritten pages exclusive of figures. Authors should send four copies of papers to one of the guest editors listed below and should please respect the following dates:

Full paper due: October 15, 1987
Acceptance notification: December 1, 1987
Final paper due: February 1, 1988

Guest Editors

J. N. Daigle
W. E. Simon GSBA
University of Rochester
Rochester, NY 14607

(716) 275-4791
Bitnet: DAIGLE @ UORGSM

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Dept. of E&CE
GMI
1700 W. Third Ave.
Flint, MI 48502
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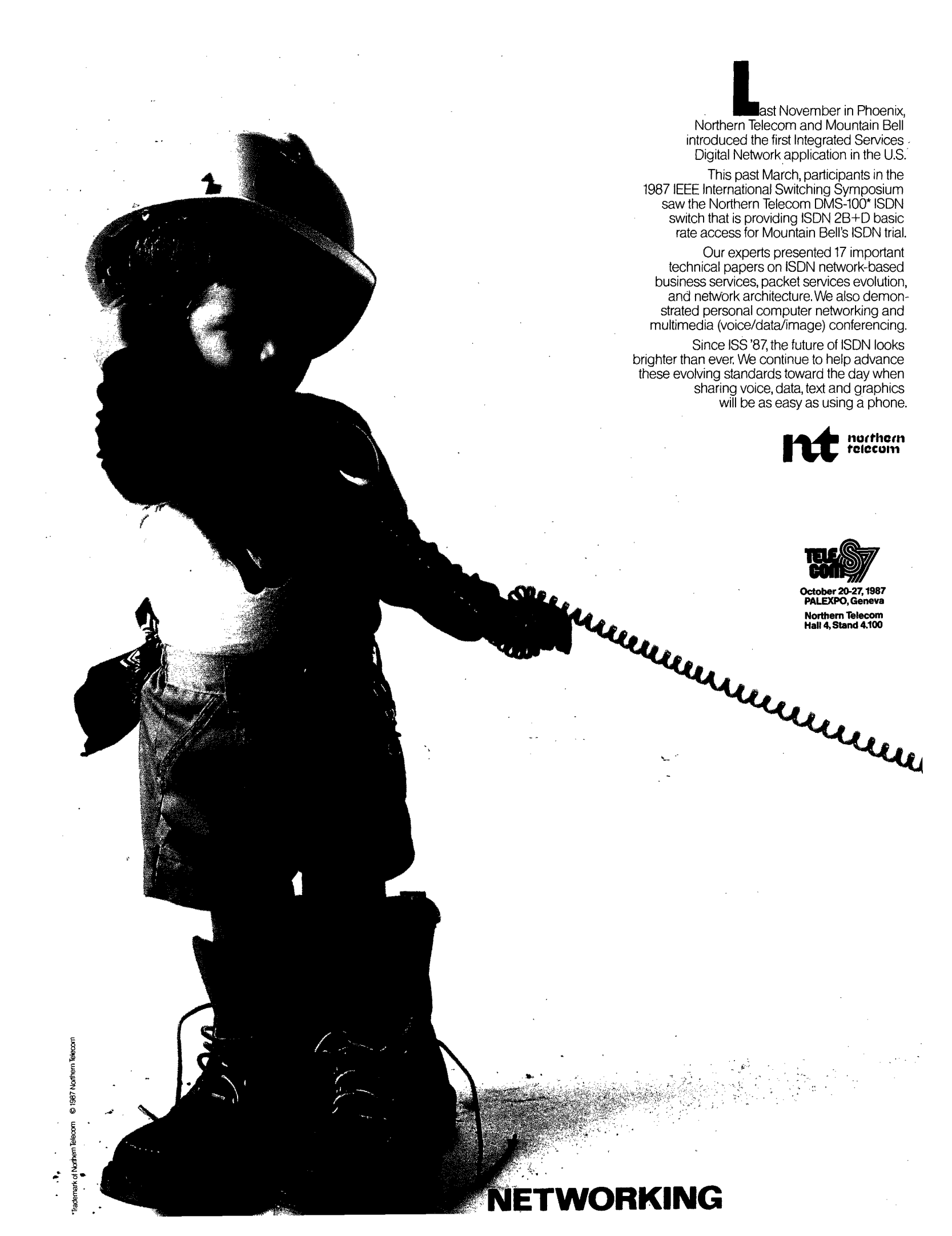

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