




LIBRARY OF CONGRESS

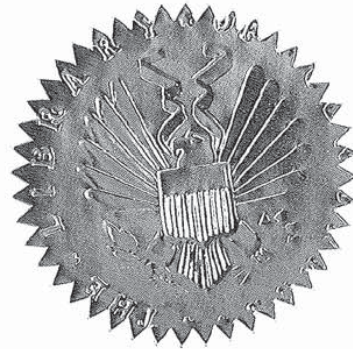
Office of Business Enterprises
Duplication Services Section

THIS IS TO CERTIFY that the collections of the Library of Congress contain a publication (GLOBECOM), 1989, Title/copyright/ date-stamped page, pages xi – xxix, and pages 428-432 on which the following article is contained, "The coded orthogonal frequency division multiplexing (COFDM) technique, and its application to digital radio broadcasting towards mobile receivers " - are a true and accurate representation from that work.

IN WITNESS WHEREOF, the seal of the Library of Congress is affixed hereto on December 23, 2016.



Gregory T. Cooper
Duplication Services, Section Head
Office of Business Enterprises
Library of Congress





GLOBECOM '89

IEEE Global Telecommunications Conference & Exhibition

Dallas, Texas • November 27-30, 1989

Conference Record

Vol. 1 of 3

“Communications Technology for the
1990s and Beyond”



Sponsored by IEEE Communications Society,
and the Dallas IEEE Section



TK5101
A1145a
1989,
.701.1

Additional copies of Volume 1, 2, and 3 may be ordered from:

IEEE Service Center
Publications Sales Department
445 Hoes Lane
P.O. Box 1331
Piscataway, New Jersey 08855-1331

IEEE Catalog Order No. 89CH2682-3
Library of Congress Catalog Card No.: 87-640337

COPYRIGHT AND REPRINT PERMISSIONS:

Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limits of U.S. copyright law, for private use of patrons, those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through the Copyright Clearance Center, 20 Congress St., Salem, Mass. 01970. Instructors are permitted to photocopy isolated articles for noncommercial classroom use without fee. For other copying, reprint or republications permission, write to Director, Publishing Services, IEEE, 345 East 47th St., New York, NY 10017. All rights reserved. Copyright© 1989 by The Institute of Electrical and Electronics Engineers, Inc.

Tuesday Morning 9:00 AM - 12 Noon

SESSION 1 Multi-wavelength Network Technology and Applications *Metropolitan*

ORGANIZERS: L. Kazovsky, Bellcore, USA
J. Stern, British Telecom Research Lab., UK

CHAIRPERSON: L. Kazovsky
SPONSOR: Optical Communications

- 1.1 FSK with Direct Detection in Optical FDM Networks
I.P. Kaminow, AT&T Bell Labs, USA
- 1.2 Multidimensional Optical Switching Networks
D.W. Smith, P. Healey, S.A. Cassidy, British Telecom Research Labs., UK
- 1.3 Optical Signal Processing for Local-Access Networks
L. Kazovsky, Bellcore, USA
- 1.4 A Consideration on Single-mode Fibers for Frequency-Division-Multiplexing Transmission Systems
N. Shibata, K. Nosu, NTT Transmission Systems Labs., Y. Azuma, NTT Telecommunications Serv. Supp., Japan
- 1.5 Multiwavelength Technology for Local Loop Applications
D.B. Payne, A.M. Hill, British Telecom Research Labs., UK
- 1.6 Switching In Coherent Multi-Carrier Systems
B. Streb, E.J. Bachus, J. Vathke, Heinrich-Hertz-Institut für Nachrichtentechnik Berlin GmbH, Germany (FR)

SESSION 2 Advanced Digital Radio Systems in Propagation Environment *Sapphire*

ORGANIZERS: P. Balaban, AT&T Bell Labs., USA
W.D. Rummeler, AT&T Bell Labs., USA

CHAIRPERSON: W.D. Rummeler
SPONSORS: Communications Systems Engineering
Radio Communication

- 2.1 Experimental Results for Multimode Interference during Dispersive Fading
P. Balaban, AT&T Bell Labs., USA
- 2.2 Multimode Interference Generation in the Horn Reflector Antenna System During Multipath Fading
J.J. Kenny, AT&T Bell Labs., USA
- 2.3 Tilted-Beam-, Beam-Width- and Space-Diversity Improvements on Various Paths
A. Satoh, O. Sasaki, NTT Radio Communication Systems Labs., Japan
- 2.4 Further Results of Angle and Space Diversity Measurements on a Line-of-Sight Radio Link
S.A. Mohamed, G.D. Richman, P.W. Huish, British Telecom Research Lab., UK
- 2.5 Statistical Distribution of Parameters in a Variable Delay Two-Ray Propagation Model
P. Balaban, V.P. Dewal, AT&T Bell Labs., USA
- 2.6 A Microwave Radio Path Data Acquisition System
R.J. Finger, MCI Telecommunications Corp., USA
- 2.7 Scattered Microwave Energy and Building Surface Features
A.R. Noerpel, A. Ranade, Bellcore, USA

SESSION 3 Mobile Radio Communications *Topaz*

ORGANIZER: A.D. Kucar, BNR, Canada

CHAIRPERSON: A.D. Kucar

SPONSOR: Radio Communication

- 3.1 Technological State of the Art and Future Trends of High-Speed Digital Mobile Communications
T. Hattori, H. Suzuki, NTT Radio Communication Sys. Labs., Japan
- 3.2 900 MHz Multipath Propagation Measurements for U.S. Digital Cellular Radiotelephone
T.S. Rappaport, S.Y. Seidel, Virginia Polytechnic Ins. & St. Univ., R. Singh, LCC, Inc., USA
- 3.3 Adaptive Equalization and Viterbi Decoding for Digital Mobile Radio Systems
R. D'Avella, E. Turco, ITALTEL Sit, L. Moreno, Consultant, Italy
- 3.4 Adaptive Equalization in TDMA Digital Mobile Radio
M. Uesugi, K. Honma, K. Tsubaki, Matsushita Comm. Industrial Co., Ltd, Japan
- 3.5 A Comparison of Least Squares and Gradient Adaptive Equalization for Multipath Fading in Wideband Digital Mobile Radio
R.A. Ziegler, J.M. Cioffi, Stanford University, USA
- 3.6 Probability of Error Analysis of Digital Partial Response Continuous Phase Modulation w/Two Bit Differential Detection & Offset Receiver
Diversity in Fast Rayleigh Fading
S.M. Elnoubi, Wichita State University, USA
- 3.7 A Simulation Package for Digital Cellular Mobile Radio Applications
H. Hashemi, Sharif University of Technology, Iran

Tuesday Morning 9:00 AM - 12 Noon

SESSION 4 Switching Programmability *Cannes*

ORGANIZERS: G.S. Kuo, NYNEX Corp., USA
S. Liu, GTE, USA

CHAIRPERSON: G.S. Kuo

SPONSOR: Communications Switching

- 4.1 A Service Designer's Functional View of Intelligent Network
R.D. Gove, J.A. Roberts, Ameritech Services, USA
- 4.2 An Architecture for Programmable Network Elements
F.L. Ross, DSC Communications Corp., USA
- 4.3 A Feature Programming Platform and Interface
B.M. Coker, Ericsson Network Systems, USA
- 4.4 Defining Intelligent Network Services in a Multivendor Distributed Environment
H.S. Fung, GTE Labs., USA
- 4.5 Service Creation in an Intelligent Network
R.E. Bright, M. Morgan, E.J. Weiss, AT&T Bell Labs., USA
- 4.6 Real-Time Mental Programming Language and Architecture
A. Grimshaw, University of Virginia, A. Silberman, J.W.S. Liu, University of Illinois, USA
- 4.7 Service Programmability in Intelligent Networks
S.F. Knapp, F.G. Oram, Bellcore, USA

SESSION 5 Advances in Computer Communications *Monet*

ORGANIZERS: M. Sarraf, AT&T Bell Labs, USA
K. Joseph, David Sarnoff Research Labs., USA

CHAIRPERSON: M. Sarraf

SPONSORS: Computer Communications
Data Communications Systems

- 5.1 A Distributed Queue Metropolitan Area Network for Combined Video, Voice, Wideband Data and Narrowband Data
M. Kadoch, A.K. Elhakeem, Concordia University, Canada
- 5.2 Performance Analysis of Integrated Data/Voice Star Topology Circuit-Switched Networks
I. Rubin, J.K. Lee, University of California, L.A., USA
- 5.3 Analysis of an Integrated Services Token-Controlled Ring Network
P.C. Wong, Hong Kong Polytechnic, T.S. Yum, The Chinese University of Hong Kong, Hong Kong
- 5.4 Designing High Speed Controllers for High Speed Local Area Networks
P. Martini, M. Rupprecht, Technical University of Aachen, Germany (FR)
- 5.5 Preventing Overload and Verifying Link Stability in an Implementation of the DPNSS Layer 2 Protocol
M.V. Stein, A.W. Berger, J.S. Kent, AT&T Bell Labs., USA
- 5.6 Minimum-Cost Dimensioning Model for Common Channel Signaling Networks Under Joint Performance and Reliability Constraints
Y. Lim, GTE Labs., USA
- 5.7 On Transparent Bridging of CSMA/CD Networks
C.K. Kwok, B. Mukherjee, University of California, Davis, USA

SESSION 6 Integrated Network Management and Security *Monte Carlo*

ORGANIZER: M. Allen, Northern Telecom, Inc., USA
CHAIRPERSON: D.N. Zuckerman, AT&T Bell Labs., USA

SPONSORS: Network Operations and Management
Standards Activity Board

- 6.1 An Architecture for Integrated Network Management
A. Kara, M. Kawasumi, S. Nakai, NEC Corporation, Japan
- 6.2 Activity-Based User Interface for Network Management
S. Rabie, V. Carter, G. Wilbur, BNR, Canada
- 6.3 A Network Status Monitoring System Using Personal Computer
L. Chang, W. Chan, J. Chang, P. Ting, M. Netrakanti, AT&T Bell Labs., USA
- 6.4 Customer Management of Local Exchange Carrier Services Using OSI
B. Alper, J. Bretscher, T. Grim, D. Kuhl, P. Silverman, Ameritech Services, USA
- 6.5 Voice-Based Security: Identity Verification over Telephone Lines
T.C. Feustel, G.A. Velius, Bellcore, USA
- 6.6 Assuring System Data Integrity - an Overview
J.K. Akeson, Bellcore, USA
- 6.7 Standards for Security in Open Systems
W.S. Ford, BNR, Canada

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.