

1984 IEEE
Military Communications
Conference

73-34610-23
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84CH2069-3
84-81786

MILCOM'84

IEEE MILITARY COMMUNICATIONS CONFERENCE

Los Angeles, California October 21-24, 1984

Conference Record Volume 1

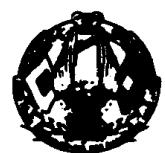
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"Progress in Satellite Communications"

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IEEE Communications Society
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Catalog Order No. 84CH2069-3
Library of Congress Catalog Card No. 84-81786

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General Chairman's Welcome

1984 IEEE MILITARY COMMUNICATIONS CONFERENCE

PROGRESS IN SATELLITE COMMUNICATIONS



Communication using high altitude satellites has been a fact of life for over 20 years. The impact of satellite communication and computer technology has been so strong that it is considered comparable to the earlier industrial revolution. It is therefore appropriate for "Progress in Satellite Communications" to be the theme for MILCOM'84.

A very significant fraction of the portion of the Department of Defense budget allocated to Command, Control, Communications and Intelligence (C³I) is used for satellite communication programs, together with supporting research and development. Satellite communication is currently employed by a wide variety of both strategic and tactical units in the Army, Navy, Air Force and Marine Corps as well as other defense agencies. There are literally thousands of fixed, transportable and mobile earth terminals operating with over a dozen military satellites. In addition, commercial satellite systems are used for transmitting a considerable amount of military traffic.

In the early days, satellites were small and simple, while the earth terminals were extremely large and relatively few in number. Over the years, as launch vehicle capability increased, the spacecraft have grown in size, capacity and sophistication, with the capability for serving many different user communities. Current emphasis is on survivability and dynamic allocation of resources. A broad range of technologies is involved.

Many of you have played an important role in the development and application of this new, and still growing, communications medium. Our purpose is both to review where we have been and to examine future directions. The present and future role of terrestrial communications will also be assessed.

A handwritten signature in black ink, appearing to read "N. Yar".

Nicholas Yar
Chairman, MILCOM'84

Technical Program

CHAIRMAN'S MESSAGE



Use of satellite communication by the military establishment started in the early 1960s and has been increasing ever since. Application of this medium has had an enormous impact on communications in both the strategic and tactical environments. Exploitation of the unique characteristics of satellite relay has helped solve many difficult communication problems and has presented opportunities for incorporation of new military doctrine and tactics.

MILCOM'84 is dedicated to the examination and discussion of the relevant satellite communication technologies, programs and systems which are applicable to the evolving role of military command, control and communication for the next two decades.

The technical program includes:

- (1) Three plenary sessions.
- (2) 24 unclassified and 18 classified sessions and panels with papers covering system technology, components and devices, architectural and programmatic aspects, institutional issues and assessment of satellite communication in comparison with other transmission media.
- (3) Two all-day tutorial sessions on antennas and fiber optics.

We believe this is an unusual opportunity for conferees to receive a thorough exposure to the many facets of military satellite communication and the wide range of relevant technical disciplines. We invite you to attend as many sessions as possible.

Fred E. Bond
Fred E. Bond
Technical Program Chairman, MILCOM'84

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Organizer: W. Linton, Jr., USAF/SD
 Chairman: W. Linton, Jr.
 Sponsor: DoD

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Organizer: D. H. Phillips, Aerospace
 Chairman: D. H. Phillips
 Sponsor: MILCOM '84 Technical Program Committee

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Organizer: F. Ellersick, MITRE
 Chairman: T. P. Quinn, OSD
 Sponsor: DoD

- 7.1 F. E. Bond, Aerospace
 7.2 J. S. Toma, OJCS
 7.3 R. Conley, formerly CNO
 7.4 E. W. Harding, DCA/MSO
 7.5 R. S. Semon, HQDA

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 Chairman: G. J. Luhowy
 Sponsor: MILCOM'84 Technical Program Committee

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 Chairman: J. R. Lesh
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Organizer: R. Rechter, TRW
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 Sponsor: MILCOM'84 Technical Program Committee

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Organizer: T. E. Bleier, Aerospace
 Chairman: T. E. Bleier
 Sponsor: DoD

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 Chairman: V. O.K. Li
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Organizer: L. Krebs, DCA/DCEC
 Chairman: L. Krebs
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Chairman:	L. Milstein	
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SESSION 35 MILSTAR*

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Chairman:	J. J. Spilker, Jr.
Sponsor:	DoD/Joint MILSTAR Program Office
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35.2	Use of the MILSTAR Control Structure for an Army Application J. C. Tiernan, Lincoln Lab
35.3	MILSTAR/FEP: Access and Network Control Concepts D. Kolba and D. McElroy, Lincoln Lab
35.4	Comparison of Performance of Partial and Full Processing Communications Satellites in AWGN and Nuclear Induced Rayleigh Fading M. R. Dresp, A. R. Robbins, N. P. Shein, and D. K. Leichtman, MITRE
35.5	Antenna Tracking Performance in a Nuclear Scintillation Environment E. B. Knick, Harris
35.6	MILSTAR System Exploratory Development Technology T. B. Hughes, NAVALEX Telecommunications, R. W. Bricker, Jr. and K. Taylor, Booz, Allen & Hamilton Inc.

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Organizer:	V. Josephson, Aerospace
Chairman:	V. Josephson
Sponsor:	DoD
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33.2	Long Term Effects of the Natural and Enhanced Space Environment and Potential Solutions S. P. Bower, Aerospace
33.3	Degradation of Satellite Links from High Altitude Nuclear Bursts L. Whittner, DNA
33.4	High Altitude EMP Effects on Satellites and Ground Terminals C. Longmire, MRC
33.5	Hardening Against Nuclear Effects R. Kingsland, TRW
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 Chairman: G. Huth
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 Chairman: J. Reinheimer
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 Chairman: A. Habibi
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 Chairman: D. J. Waters, RADC
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| 41.6 | Ground Terminal Modem Technology for Wideband Satellite Communications | A. A. Castro and E. Perdue, Raytheon |

SESSION 39

ADAPTIVE A/D CONVERTERS FOR INTERFERENCE REDUCTION

- Organizer: F. Amoroso, Hughes
 Chairman: F. Amoroso
 Sponsor: MILCOM'84 Technical Program Committee
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 Chairman: A. J. Simmons
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| 42.3 | Radar Cross Section Measurements of Aircraft Antennas | R. V. McGahan, RADC |
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