

THE PROCEEDINGS OF 1991 GLOBAL SATELLITE COMMUNICATIONS SYMPOSIUM

**May 28–31, 1991
Nanjing, China**

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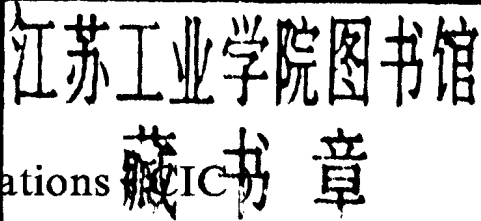
China Institute of Communications (CIC)

International Telecommunications Satellite
Organization (INTELSAT)

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China Institute of Communications

Nanjing University of Posts and Telecommunications (NUPT)



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Greetings from the Co-Chairman :

Mr. Li Yukui

I am delighted to welcome you to Nanjing, China for GSCS'91. The Symposium will no doubt prove itself to be an outstanding and memorable event.

Since the world's first commercial satellite, Early Bird, rocketed into the evening sky in 1965, significant progress has been made in communication by satellite. GSCS'91 will provide an important and prestigious forum for presentation and discussion on all aspects of satellite communications. Our objective is to make GSCS'91 a truly international conference which brings together professionals from different countries and areas to exchange new ideas and share the latest developments in this field. We are confident that GSCS'91 will achieve great success not only in advancing science and technology but also in promoting friendship and cooperation in the field of international satellite communications.

Nanjing, the capital of six Chinese feudal dynasties, welcomes you with its unique oriental culture, many scenic spots and historic locations, Nanjing's rich history augments its present and we are eager to share it with you.

My sincere thanks go to the organizers and dedicated members of the Symposium.



Li Yukui

Chairman of CIC

Acknowledgment

The Global Symposium on Satellite Communications is initiated and completed in Nanjing from May 28 to 31 of 1991.

The sponsors are International Satellite Communications Organization (INTELSAT) and China Institute of Communications (CIC). The organizers are Intelsat, Nanjing university of Posts and Telecommunications (NUPT), Nanjing Aeronautic Institute (NAI) and Jiangsu Association of Science and Technology (JAST). The Honorary Chairman of the International Advisory Board is Mr. Yang Taifang, Minister of the Ministry of Posts and Telecommunications, China. The Co-Chairman of GSCS'91 are Mr. Li Yukui, Chairman, CIC, Mr. David T. Tudge, Deputy Director General, Intelsat.

At the conference, many scholars read out in public their excellent academic papers. The Sessions-Chairman have contributed to the academic exchanges, too.

The Organization Unites have made multifarious efforts to arrange the lodgings, foods, pre-mid-post activities, compilation and publication of the papers for the overseas and domestic participants.

My thanks go to the anonymous units and individuals for their kind assistance, mentioned and un-mentioned above. Meanwhile, we extend our thanks to Jingling Hotel who had given their excellent services to the conference. We owe a particular debt to the China Natural Science Foundation and Intelsat as they gave a generous financial assistance to our conference.

GSCS'91 is short, Friendship and Co-operation are long.

Many thanks

TECHNICAL PROGRAM OVERVIEW

TUE. 28, May 9:00am – noon	Opening Ceremony Panel Session Moderator: Mr. Pierre Madon, INTELSAT Panel Members: Mr. Louk Jurgens, Canada. Mr. Robin Maule, Hong Kong. Mr. Yasuo Hirata, Japan. Representatives of CHINA			
TUE 28, May 2:00–5:30pm	Session 1 21st Century Satellite Communication Chairman: Dr. J. Pelton USA	Session 2 Financial and Economic Issues Chairman: Dr. Ramin Khadem UK	Session 3 On-Board Technologies Chairman: Dr. E. Seggese Italy	
WED 29, May 8:30am–noon	Session 4 New systems and Services Chairman: Dr. A. Winter Canada	Session 5 Future Satellite Business Development Chairman: Ms. Kim Degnan USA	Session 6 Communication Theory and Application Chairman: Dr. A. Bush USA	Session 7 In-Orbit Test and Automated Communication System Monitoring Chairman: Mr. S.C. Bangara USA
WED 29, May 2:00–5:30pm	Session 8 International and National Telecommunication Systems Chairman: Dr. Yasuo Hirata Japan	Session 9 Insurance Issues Chairman: Mr. John Howes UK	Session 10 VSAT Systems Chairman: Dr. E. Cacciamani USA	Session 11 Integration of Satellites and Terrestrial Networks and Related Technologies Chairman: Dr. Shuzo Kato Japan
THU 30, May 8:30am–noon	Session 12 International Telecom. Systems and Their Operation Chairman: Mr. T.M. Seddon Hong Kong	Session 13 System Analysis and Applications Chairman: Dr. Lu Shue-Ching Taiwan, China	Session 14 Coding and Synchronization Theories Chairman: Dr. Iwao Sasase Japan	Session 15 Satellite Technology and In-Orbit Operation Chairman: Mr. S.B. Bennett USA
THU 30, May After noon	Free Activities			
FRI 31, May 8:30am–noon	Session 16 System Innovation Chairman: Mr. Roger Colby USA	Session 17 Education Via Satellite Chairman: Mr. Scott Chase USA	Session 18 Product Assurance and Standards Chairman: Mr. R. Strauss USA	Session 19 System Improvements for Satellite Telecommunications Chairman: Dr. Toshio Mizuno Japan
FRI 31, May 2:00–5:30pm	Session 20 Satellite, Payload and Launch Vehicle Technology Chairman: Mr. J.R. Owens USA	Session 21 Satellite Communications and Applications Chairman: Dr. William Wu USA	Session 22 Modulation Alternatives for Satellite Communications Chairman: Prof. T.T. Tjhung Singapore	
Meeting Room	Room 1	Room 2	Room 3	Room 4

Greetings Speech from the Co-Chairman : Mr. D. T. Tudge

Dear Participants:

I am particularly pleased to have this opportunity to welcome you to Nanjing and the Global Satellite Communications Symposium. INTELSAT is honored to serve as a co-sponsor of this gathering—the first of its kind.

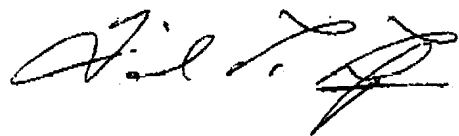
We live in a time of exciting advances in satellite technology. These advances are lowering the costs of satellite capacity and enabling greater enjoyment of the tangible benefits of satellite communications by all nations.

One cannot fail to notice the great social, economic and political impact of satellites. When one watches news on television from around the world as it develops, telephones a friend overseas with ease, or accesses an international data bank with a personal computer, it is easy to see that the concept of the "global village" is fast becoming a reality.

Satellite technology makes worldwide communications possible. That is why gathering such as this symposium are so important, ideas will be presented, discussed and debated. Each paper presented here contributes to making the benefits of satellite communications available to more and more people around the world.

So, in the spirit of scientific inquiry, I welcome you all and offer the support of the INTELSAT Organization for a very productive symposium. I look forward to meeting you personally during our time here in Nanjing.

Yours sincerely,



David T. Tudge

Deputy Director General
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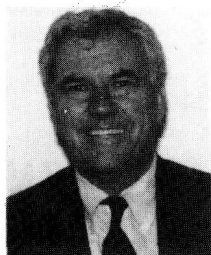
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TECHNICAL SESSIONS

SESSION 1

21st Century Satellite Communications, Technical and Economic Aspects

Room 1 2:00pm TUE 28, May

Chairman: Dr. Joseph Pelton, Director,
Telecom. Program Univ. of
Colorado, USA.

Co-Chairman: Mr. Wu Mulong, Chief Engi-
neer of the China Electronics In-
formation Industry Group
Company, Beijing, China

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Li Ye, Shao Hongqi

Institute of Spacecraft System Engi-
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Chinese Academy of Space Technology,
Beijing 100081, China | 32 |
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Cable Systems for International Telecom-
munications
<i>Yasuo Hirata</i>
Business Development Headquarters,
KDD, Tokyo, Japan | 678 |

SESSION 2

Financial and Economic Issues

Room 2 2:00pm TUE 28, May

Chairman: Dr. Ramin Khadem, INMAR-
SAT, London, UK

Co-Chairman: Mr. Zong Ruli, Senior Engineer
of Zhongxin (the Chinese Com-
munication Technology Com-
pany), Beijing, China

Session is being Organized as a round table
discussion of invited panelists, moderated
by Dr. Khadem. Audience participation will
be encouraged. Handouts will be provided
by the panelists.

SESSION 3

On-Board Technologies

Room 3 2:00pm TUE 28, May

Chairman: Dr. E. Seggese, Director General Space Eng., Rome, Italy
Co-Chairman: Mr. Zong Ruhou, Chief Engineer of the First Research Institute of Ministry of Posts and Telecommunications, 48, Pingjiang Road, Shanghai, China

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Chairman: Allen Winter, MPR Teltech Ltd, Burnaby, B.C., Canada
Co-Chairman: Mr. Sun Renqi, Professor of Nanjing University of Posts and Telecommunications, Nanjing, China

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Chairman: Ms. Kim Degnan, V.P. of Pacific Satellite, Inc. Washington, D.C., USA

Co-Chairman: Mr. Wu Mulong, Chief Engineer of the China Electronics Information Industry Group Company, Beijing, China

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Chairman: Mr. Satish C. Bangara, INTEL-SAT, Palo Alto, CA, USA
Co-Chairman: Kong Xianzheng, Senior Engineer, P. O. Box 9, Jiaxing, Zhejiang, China

- | | | |
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Co-Chairman: Zheng Zhihang, Professor of Electronics Engineering Department of Shanghai Jiaotong University, Shanghai, China

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