

IEEE VTS NEWS DIGEST

Connecting the Mobile World

Companion to VTS News, Volume 47, Issue 2 May 2000

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Short articles are available on-line. For longer articles, only the abstract is available on-line. VTS News is sent to all VTS members, and is included in the society subscription. Non-VTS members can subscribe at a cost of \$30 per year. For details of this, or for pricing information of single copies, contact the IEEE Customer Service on 1-800-678-IEEE (USA and Canada), + 1 732-981-1393 (outside USA and Canada), and FAX: + 1 732-981-0027

Foreword

James Irvine, Editor

If you attended VTC '99-Fall last September and listened to almost any of the keynote speakers, you could be forgiven for thinking that all the problems of 3rd generation had been solved, the systems were commercially successful, and interest was now firmly with 'fourth generation', whatever that may be.

The money-men seem to agree. Vast sums are being invested – some would argue gambled – on 3rd generation licenses. In the UK, at the time of writing at the end of March, the estimated price in the auction had been exceeded by more than three times and none of the parties bidding had pulled out. A fortnight later, as we close for press, the total is more than *eight* times the estimate, and at least one 'lucky' bidder will have to pay more than £5 billion (about \$8 billion) for their licence, and that's without deploying a single base station. The auction will finish by the end of April, and you can see the result on <http://www.spectrumauctions.gov.uk/> Germany plans similar auctions, and France is also now reconsidering whether it should not have an auction.

As Iridium has shown, throwing large sums of money at the problem is no guarantee of commercial success. To recoup the sort of sums being spent (over £1000 for every man, woman and child in the UK for a 20 year license) will require mobile operators to persuade their users to open their wallets on new products and services they do not, as yet, know they need.

If users embrace mobile technology as a part of their lives, and in particular use it for e-commerce, then spec-

trum is cheap at almost any price. However, if all users really want is a simple communication device for voice calls, then the prices being paid for spectrum could be amongst some of the worst investments ever made. Complex, multipurpose terminals do not come without a price – larger phones with more features are harder for users to understand. We report in this issue of VTS News that CTIA research suggest that Americans are not yet ready for 3rd generation services.

The financial markets have made up their mind. The model they look to is the PC leading to the Internet, not the transistor radio leading to the handheld TV. Four million *i-mode* terminals have made NTTDoCoMo the largest company in Japan in terms of stock market valuation, although *i-mode* accounts for a mere 1% of its business.

In the last issue we published a slightly sceptical opinion piece from John Bush on 3rd generation systems. Given that this questioned some of the received wisdom about the desire amongst customers for data services, I was expecting to receive many letters putting the opposite view. Given that my job depends on mobile communications research, I will go further and say that I was hoping for such an outcome. However, so far the postbag has remained completely empty. Does this mean that the engineering view is that non-voice services will be slow to start? What do you think? Answers on a postcard, or even an email, to the address overleaf.

Vehicular Technology Society Executive Committee

President, **A. Kent Johnson**
Brigham Young University
1225 East Cambridge Court
Provo, UT 84602
Tel: 1 801 378 3726
Fax: 1 801 378 7575
E-mail: a.k.johnson@ieee.org

Executive Vice President, **J. R. Cruz**
The University of Oklahoma
School of Electrical and Computer Eng
202 West Boyd, Room 219
Norman, OK 73019-0631
Tel: 1 405 325 4280
Fax: 1 405 325 3836
E-mail: cruz@mailhost.ecn.ou.edu

Vice President Mobile Radio,
Eric J. Schimmel
6216 Hollins Drive
Bethesda, MD 20817
Tel: 1 301 530 7987
E-mail: e.schimmel@ieee.org

Vice President Land Transportation,
Harvey M. Glickenstein
PB Transit & Rail Systems, Inc
3334 Adams Court
Bensalem, PA 19020
Tel: 1 201 648 8700
Fax: 1 201 648 0888
E-mail: h.glickenstein@ieee.org

Vice President Motor Vehicles,
Robert A. Mazzola
R.A. Mazzola Associates.
12500 Crystal Mountain Drive #620
Thompsonville, Michigan 49683.
Tel: 1 231 378 4722
E-mail: rmazzola@prodigy.net

Secretary, **Essam Sourour**
Ericsson, Inc.
7001 Development Drive
Post Office Box 13969
Research Triangle Park, NC 27709
Tel: 1 919 472 7067
Fax: 1 919 472 6555
E-mail: sourour@rtp.ericsson.se

Treasurer, **Charles Backof**
Motorola
8000 W. Sunrise Blvd.
Fort Lauderdale, FL 33322
Tel: 1 954 723 6152
Fax: 1 954 723 6957
E-mail: EPOR16@email.mot.com

VTS Board of Governors

Charles Backof ('01) *VTS Treasurer*

Dennis Bodson ('01)
Standards Committee Chairman
233 N. Columbus St.
Arlington, VA 22203
Tel: 1 703 243 3743
Fax: 1 703 522 4342
E-mail: bodsond@worldnet.att.com

J. R. Cruz ('02) *Executive Vice President,
IEEE Transactions on Vehicular
Technology Editor*

Robert Fenton ('01)
Ohio State Univ.
2177 Oakmount Rd.
Columbus, OH 43221
Tel: 1 614 292 4310
Fax: 1 614 292 7956
E-mail: fenton@ee.eng.ohio-state.edu

Robert L. French ('00) *IEEE ITS Council
Representative*
R&D. French Associates
6137 Tuliptree Lane
Nashville, TN 37221
Tel: 1 615 673 6211
Fax: 1 615 673 0311
E-mail: r.french@ieee.org

John T. Gilsean ('02)
13736 Lockdale Rd.
Silver Spring, MD 20906-2117
Tel: 202 647 2592
Fax: 202 647 7407
E-mail: GILSEANJT@state.gov

A. Kent Johnson ('01) *VTS President*

Anil T. Kripalani ('02)
12766 Jordan Ridge Court
San Diego, CA 92130-2748
Tel: 1 858 658 4241
E-mail: t_kemers@qualcomm.com

Melvin A. Lewis ('00) *National
Conference Coordinator, Conference
Board Member*
Lockheed Martin
Ridge Hill M/S-29
Yonkers, NY 10710
Tel: 1 914 964 3820
Fax: 1 914 964 2891
E-mail: m.lewis@ieee.org

Robert A. Mazzola ('00) *VTS Vice
President, Convergence Conference
Committee Representative, SAE Liaison,
Long Range Planning Committee Chair*

George F. McClure ('00) *Past President,
Conference Committees Chairperson,
Public Relations/Publicity Committee
Chairperson*
1730 Shiloh Lane
Winter Park, FL 32789
Tel: 1 407 647 5092
Fax: 1 407 644 4076
E-mail: g.mcclure@ieee.org

Samuel R. McConoughey ('01)
Past President
Mobile Communications Consulting
13017 Chestnut Oak Drive
Gaithersburg, MD 20878-3556
Tel: 1 301 926 2837
Fax: 1 301 926 2506
E-mail: mccon@compuserve.com

Tom Rubinstein ('02) *VTS Webmaster,
Conference site selection, New member
liaison*
Motorola
9980 Carroll Canyon Road
P. O. Box 85036
San Diego, CA 92186-9130
Tel: 1 858 530 8432
Fax: 1 858 530 8313
E-mail: cegr01@email.mot.com

Raymond C. Trott ('00) *Awards
Committees Chairperson, Paper of the
Year Awards, Avant-garde Awards*
Trott Communications Group, Inc.
1425 Greenway Drive, # 350
Irving, TX 75038
Tel: 1 972 580 1911
Fax: 1 972 580 0641
E-mail: ray.trott@trottgroup.com

James A. Worsham, Jr. ('02) *Conference
Board Member*
BellSouth, Room 42U85,
675 West Peachtree Street NE,
Atlanta, GA, 30375
Tel: 1 404 330 0381
Fax: 1 404 330 0386
E-mail: jim_worsham@snt.bellsouth.com

VTS News Staff

Editor

James M. Irvine
Mobile Communications Group, EEE
Strathclyde University
George Street
Glasgow G1 1XW Scotland
Tel: +44 141 548 4072
Fax: +44 141 552 4968
E-mail: j.m.irvine@ieee.org

Senior Editors

Automotive Electronics
William J. Fleming
TRW Vehicle Safety Systems, Inc.
4505 West 26 Mile Road
Washington, MI 48094
Tel: 1 810 781 7394
Fax: 1 810 781 7274
E-mail: william.fleming@trw.com

Transportation Systems
Harvey M. Glickenstein

Mobile Radio
Javier Gozavez
C/ San Juan Bosco, nº 14-B 3F
03005 Alicante
SPAIN
E mail: j.gozavez@ieee.org

Professional Activities
Frank E. Lord
35 Hartford Ave.
San Carlos, CA 94070
Tel/Fax: 1 650 594 0512

Chapter News & Meetings
Gaspar Messina
9800 Marguetta Drive
Bethesda, MD 20817
Tel: 1 202 418 1348
Fax: 1 202 418 1412
E-mail: GMESSINA@fcc.gov

Washington News
Eric J. Schimmel

Amtrak's Richmond Static Frequency Converter Project

Andrew L. Jones, Project Manager, Amtrak

In this feature article, Andrew Jones looks at recent developments in the power supply to trains in the USA's North East Corridor services. While most attention recently has been taken by the extension of electrification from New Haven to Boston and the new Acela trains, improvements to the existing infrastructure have continued. The article discusses power supply requirements for railway

electrification, in particular the problem of supply a heavy single phase load - the railway - from a three phase network. The article then reviews traditional solutions in the form of rotating frequency converters before going on to describe the new static frequency converter project at Richmond.

The IEEE and ITS

Robert L. French, R&D French Associates

This is a reprint of the article which originally appeared in IEEE Intelligent Systems, Nov/Dec 1999, p.75-77. Permission to republish is gratefully acknowledged.

This article highlights the IEEE's role in shaping the Intelligent Transportation Systems movement, which sprouted during the '60s, lay partly dormant during the '70s, blossomed during the '80s, and started bearing fruit with its many deployments throughout the world during the '90s. It also outlines the mission of the IEEE's new ITS Council for coordinating ITS interests among the numerous IEEE societies whose scope includes technologies used for implementing ITS functions and services.

ITS background [1]

Intelligent transportation systems is an umbrella term that covers the application of a wide variety of computer, communication, positioning, sensing, control, and other information-related technologies to improve the efficiency, safety, and environmental aspects of surface transportation. Major categories of ITS include traffic-management systems (for example, adaptive traffic signals, automatic incident detection, electronic toll collection, and emission sensing) and traveler information systems (for example, pretrip planning, motorist information, and dynamic route guidance).

ITS also include systems for public transportation (automatic vehicle location, signal preemption, smart cards for fare collection, dynamic ride sharing, and so on) and for commercial-vehicle operations (fleet management, weigh in motion- weighing trucks as they travel, automatic vehicle classification, international-border crossing, and so on). Safety-related ITS include intelligent cruise control, collision warning, collision avoidance, night vision, and platooning. Other examples of ITS include automatic Mayday signaling, coordinated emergency response, and signal preemption for emergency vehicles.

Automated in-vehicle route-guidance systems based on mechanical principles were on the market in the US around 1910; vehicle actuated traffic signals debuted in 1928; and a concept for automated highway systems was shown at the 1939 World's Fair. However, by any practical

measure, the ITS movement didn't take root until the '60s, when the first computer-controlled traffic signals and changeable message signs appeared. A US research project established concepts in the late '60s for dynamic route guidance based on real-time traffic conditions, but was canceled by Congress before testing.

Tests of similar dynamic systems occurred in both Japan and Germany in the '70s. That decade also brought the microprocessor and the beginning of GPS development and testing. Although these technologies were not associated with ITS at the time, they are now major components of many ITS systems. Thus, many of the underlying concepts and basic technologies for ITS were in place for the flurry of government-subsidized and industry-funded development programs that got underway in the mid '80s in Europe- for example, Drive and Prometheus-and Japan-for example, RACS (Road/Automobile Communication System) and Amtics (Advanced Mobile Traffic Information and Communications System).

In the late '80s, Mobility 2000, an informal organization, spurred ITS in the US. Mobility 2000 laid the groundwork for the formation in 1990 of ITS America (originally called IVHS [Intelligent Vehicle Highway Systems] America). ITS America is a public-private forum for consolidating national ITS interests and promoting international cooperation in ITS. The IVHS Act of 1991 then formalized the US ITS program and funded development through 1997. By the late 1990s, the main focus of ITS programs around the world had shifted to largescale integration and deployment.

IEEE involvement

The following selected highlights illustrate the IEEE's past and continuing involvement in the ITS movement.

Publications. The transactions and other publications of numerous IEEE societies have contained occasional papers or articles related to individual ITS technologies. However, special issues of Transactions on Vehicular Technology gave a comprehensive snapshot of ITS developments in the February 1970, May 1980, and February 1991 issues. The cover article of the May 1991 IEEE Spectrum was a special report on ITS.

Besides these occasional articles, the IEEE ITS Council has established two publications devoted to ITS:

- Newsletter of the ITS Council. Edited by Alberto Broggi of the University of Pavia, this electronic newsletter has been posted quarterly at the IEEE ITS Council's Web site (<http://www.ewh.ieee.org/tc/its/newsletters/www.ieee.org/its>) since January 1999. Individual e-mail subscriptions to the newsletter are also available at the Web site.
- IEEE Transactions on ITS. Edited by Chelsea C. (Chip) White III of the University of Michigan, this quarterly refereed journal is slated to start publication in March 2000. It will focus on the design, analysis, and control of information technology as it is applied to transportation systems. The call for papers is posted on the ITS Council Web site.

Conferences. Individual conferences of several IEEE societies have included papers and even entire sessions on ITS- for example, the Plans (Position-Location and Navigation Systems) Conference of the Aerospace & Electronic Systems Society. However, certain IEEE conferences have focused exclusively on ITS since 1989.

The Vehicular Technology Society originated the Vehicular Navigation and Information Systems Conference in 1989 in Toronto, which was the world's first ITS conference. The VNIS conferences were subsumed by the Intelligent Transportation Systems Conference series, starting with ITSC '97 in Boston. The ITSC series was started by the IEEE Ad Hoc Committee on ITS (the ITS Council's predecessor) and has been continued by the council.

Starting with ITSC '99, held in Tokyo from 5 to 8 October, the ITSC became annual. A major objective of the series is to focus more strongly than other conferences on cutting-edge-electronics-based technologies and their implications for ITS. The next ITSC will be from 1 to 3 October 2000 in Dearborn, Michigan. The call for papers is at the ITS Council Web site.

Another IEEE conference series devoted exclusively to ITS is the Intelligent Vehicles Symposium, which the Industrial Electronics Society originated in the early '90s. IV now continues under the ITS Council's auspices. The next symposium, which focuses on basic research and present and future applications for intelligent vehicles and intelligent infrastructures, will be from 4 to 5 October 2000 in Dearborn. The call for papers is at the ITS Council Web site.

Standards. In July 1991, the IEEE Standards Board approved the establishment of an ITS Standards Coordinating Committee. Known as SCC32, the committee became the 16th IEEE committee for coordinating standards in specific technology areas. Its scope reads as follows [2]:

SCC32 shall be responsible for coordinating, developing, and maintaining standards, recommended practices, and guidelines related to Intelligent Transportation Systems (ITS) within the scope of IEEE interests. SCC32 shall work with other national and international standards writing bodies to coordinate area of involvement.

Recent standards developed by SCC32 include

- 1455-1999: Standard for Message Sets for Vehicle/Roadside Communications.

- 1489-1999: Standard for Data Dictionaries for Intelligent Transportation Systems. SCC32 projects at the ballot stage include
- P1488: Standard for Message Set Template (MST) for Intelligent Transportation Systems.
- P1512: Standard for Common Incident Management Message Sets for Use by Emergency Management Centers.

Detailed information on SCC32 is available at its Web site: grouper.ieee.org/groups/scc32.

The IEEE ITS Council

On 1 January 1999, the IEEE ITS Council joined ranks with the 37 Societies and Technical Councils that constitute the 320,000-member IEEE. The ITS Council is scientific, literary, and educational in character. Its purpose is to advance and coordinate ITS activities throughout the IEEE. Its field of interest includes the theoretical, experimental, and operational aspects of electrical and electronics engineering and information technologies as applied to ITS. The council will further its work by

- publishing appropriate periodicals,
- sponsoring IEEE ITS-related conferences and conference sessions,
- sponsoring IEEE Press publications, and
- pursuing other activities in its field of interest.

Background. The ITS Council culminates an effort that began in 1993 when, at the Vehicular Technology Society's urging, several IEEE Societies with ITS interests banded together under the Technical Activities Board to create the cross-cutting Ad Hoc Committee on ITS. Although the IEEE is the world's largest professional organization, it previously had no unified vision of its role in the ITS movement. With the exception of SCC32, the IEEE's ITS interests before forming the ad hoc committee had been scattered among individual activities of the semiautonomous IEEE societies. A major concern both inside and outside the IEEE was the lack of a single point of contact for coordinating with non-IEEE ITS activities. For example, unlike other major engineering societies such as the American Society of Civil Engineers, the Institute of Transportation Engineers, and the Society of Automotive Engineers, the IEEE was not a member of ITS America, until after the ad hoc committee resolved at its organizational meeting to seek empowerment to become a member on behalf of the IEEE.

The committee focused early on ITS conference activities, starting with a special session on the IEEE's role in ITS that it organized for the First ITS World Congress, in Paris in 1994. In conjunction with VNIS and IV, the committee organized approximately 10 sessions for the Third ITS World Congress, in Orlando in 1996. The committee soon pursued plans to become a permanent IEEE entity. They successfully petitioned the Technical Activities Board for council status, a rarity in the IEEE (the Neural Networks Council is the only other IEEE Council).

Membership and organization. Unlike IEEE Societies, an IEEE Council does not have individual members. Instead, the membership comprises individual

IEEE Societies that demonstrate interest in ITS technical activities and agree to share responsibility for all the council's obligations. The ITS Council's founding members include these societies:

- Aerospace & Electronic Systems
- Antennas & Propagation
- Communications
- Computer
- Consumer Electronics
- Control Systems
- Electromagnetic Compatibility
- Electron Devices
- Industrial Electronics
- Instrumentation & Measurement
- Microwave Theory & Techniques
- Power Electronics
- Professional Communication
- Reliability
- Robotics & Automation
- Signal Processing
- Systems, Man & Cybernetics
- Vehicular Technology

Additional societies may become members upon application and approval by the ITS Council.

Transportation Systems

Harvey Glickenstein, Senior Editor

These are the items covered in the Transportation Systems column in the May 2000 VTS News. Please see the printed version for the full article.

- Working Group 2 of the Rail Transit Vehicle Interface Standards Committee had a well-attended meeting in Philadelphia at SEPTA's offices in February
- Japan's Maglev test train reached another milestone.
- Athens has opened two new rapid transit lines.
- London's Jubilee Line Extension opened last year in time to serve the Millennium Dome for the New Year's celebration.
- Docklands Light Railway in London has ordered twelve new cars.
- The first vehicles for the JFK Airport Access light rail system have been completed.
- India has decided to install automatic train protection on more than 9,000 route miles of railroad.
- The high speed line between Taipei and Kaohsiung will use Shinkansen technology.
- Alstom is providing high speed trains to Korea.
- The Toronto Transit Commission (TTC) has advertised for a Speed Control System (SCS) demonstration.
- A contract to provide positive train control on a portion of the Union Pacific Railroad's line between Chicago and St. Louis is about to be awarded.

Each member society appoints two representatives to serve on the ITS Council. In addition to funds allocated by the council's member societies, the council derives financial support from subscription sales of council publications, any surplus from conferences that it organizes or sponsors, and other sponsored activities. The council is governed by a president, vice president, secretary, and treasurer, elected annually. For additional details on the ITS Council, visit its Web site.

The IEEE has had significant roles in ITS since the movement's earliest days. With its ITS Council now in place, the IEEE is positioned to be an important ITS player in the new millennium.

References

- [1] R.L. French et al., *A Comparison of IVHS Progress in the United States, Japan & Europe through 1993*, Report IVHS AMER-94-5, Intelligent Transportation Soc. of America, Washington, D.C., 31 Mar. 1994.
 - [2] "IEEE SCC32-Standards Coordinating Committee on Intelligent Transportation Systems (ITS)," IEEE, Washington, D.C.; grouper.ieee.org/groups/scc32 (current 20 Oct. 1999).
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Automotive Electronics

Bill Fleming, Senior Editor

These are the items covered in the Automotive Electronics column in the May 2000 VTS News. Please see the printed version for the full article.

- Cold-Engine Tachometer Display
- Intelligent Transportation Systems Update
- Cell Phones, E-Cars, Distraction/Hazard/Benefit
- Automotive Electronics Enabling Technologies
- Satellite Radio Broadcasting Becoming A Reality
- Remote Vehicle Fingerprinting
- Continuously Variable Transmissions (CVTs)
- Hybrid-Electric-Powered Vehicle Update

The progress of the Honda Insight, Toyota Prius, General Motors' EV1 and Precept, and the Ford Motors' Prodigy are reviewed.

Professional Activities

Frank Lord, Senior Editor

In this article, Frank Lord discusses proposals for increases in the number H-1B visas where allow foreign nationals in speciality occupations for up to six years, and the response of IEEE-USA.

Mobile Radio

Javier Gozalvez, Senior Editor



In this issue we welcome a new Senior Editor for Mobile Radio. Javier Gozalvez is a Spaniard, educated in France and working in the UK. He has extensive knowledge of 2nd generation and proposed 3rd generations systems, and welcomes your input at j.gozalvez@ieee.org. As well as a regular column with news of recent developments in the field, from the next issue we will have a feature article each issue related to mobile radio.

These are the items covered in the Mobile Radio column in the May 2000 VTS News. Please see the printed version for the full article.

- Nokia and Visa ally on wireless payment system.
- ETSI publishes first release of UMTS specifications.
- IPv6 Forum joins the 3rd Generation Partnership Project as Market Representation Partner.
- Com-Net Critical Communications, a Pennsylvania-based provider of radio network solutions to the public safety and service market, has acquired Ericsson's Private Radio Systems business.
- The Finnish Government is backing a scheme to allocate every citizen a digital signature that can be embedded into a GSM SIM card.
- ETSI approves HIPERLAN type 2 core standards for high-speed multimedia wireless communications.
- Wireless companies form a consortium for secure e-commerce transactions.
- Vodafone Airtouch PLC and Mannesmann AG agree merger.
- UMTS Forum launches IMT-2000 licensing database on the Web.
- Qualcomm announced Dr Andrew Viterbi will retire in March.
- The Japanese wireless companies, Kokusai Electric Co Ltd, Hitachi Denshi Ltd and Yagi Antenna Co Ltd announce their merger.
- Intel and Symbol Technologies will jointly develop Wireless Local Area Networking products.
- An Israeli Insurance agent launches a mobile phone illness policy.
- New ITU group on IMT-2000 to develop work plans for future wireless services and systems.
- Qualcomm delivers new 3G CDMA chipsets
- Israel's Foxcom Wireless improves indoor and subterranean coverage.
- Motorola introduces one chip to handle all world wireless standards..
- Wireless manufacturers team up with car manufacturers to bring wireless communications to the vehicles.
- Ericsson and Qualcomm will jointly develop Bluetooth CDMA solutions for mobile handsets and devices.
- Microsoft goes mobile.
- ITU and Turkish government sign agreement to host World Radiocommunication Conference 2000, from 8 May to 2 June 2000.
- Worldwide 3G Licence auctions.
- Iridium, the financially troubled satellite telephone system, is ending its service.
- China suspends the rollout of Qualcomm's CDMA technology.
- GSM World Congress.
- CeBIT technology fair.
- CTIA Wireless 2000 trade show.
- Wireless companies launch OFDM Forum.
- The GSM Association requests a huge allocation of IP addresses to support the rollout of GPRS.
- Reports warn about mobile e-commerce and 3G availability.

VTC2000 - Fall in Boston

The second Fall VTC will be held at the Seaport Hotel & World Trade Center in Boston from the 24th to the 28th of September 2000. This is the North American VTC for this year, since the Spring VTC is in Tokyo. Response to the conference has been very great, with over 1000 papers submitted before the February deadline. Authors whose papers have been accepted will receive notification in May.

The theme of the conference is 'Bringing Global Mobility to the Network Age'. Third generation systems will soon be in commercial operation, and IMT-2000 technologies and performance evaluation will be a major area of interest. However, broadband access and possible 4th generation issues, such as OFDM, will be covered, as well as 2.5G and migration issues. Multimedia, short range wireless systems like Bluetooth, and IP technology are also included, as are traditional VTC subjects such as antennas and propagation, ITS and vehicular electronics. New applications like wireless E-commerce, software agents and hybrid solutions complete the subjects covered.

The conference will begin with a full day of tutorials organized into 7 parallel tracks. Quality proposals have been received for more topics than will fit into the

conference and we are presently sorting and reviewing the proposals. Consistent with the theme of the conference and the focus upon enhanced voice and non-voice services, it is anticipated that we will provide extensive tutorial coverage to emerging 3rd generation and generation 2.5 topics.

The main body of the conference will consist of 7 parallel tracks hosting about 500 papers along with an 8th parallel poster session track. An informal evening discussion panel is in the planning stage with a goal to explore the possible applications and benefits of enhanced voice and non-voice 3rd generation service offerings.

Boston is a popular tourist destination and a spouse program will run during the conference. The Seaport is just over a mile from Logan Airport on the waters edge and few minutes from downtown Boston. There is no place on earth more beautiful than New England in the Fall. Plan to come a few days early and stay a few days late to enjoy Boston at it's best.

The deadline for advance registration is the 15th of August 2000. Further information can be obtained from www.vtc2000.org or by email to info@vtc2000.org

Chapter News & Meetings

Gaspar Messina, Senior Editor

New VTS Chapter

As of May 15, 1998, the Vehicular Technology / Communications Society Joint Chapter of the North Italy Section has been formed later extended as joint Italy Chapter in August 1998. The Chapter Chair is Professor Francesco Vatalaro of the University of Rome, as elections have been held in October 1998. Details can be obtained from him at

Francesco Vatalaro
Univ di Roma Tor Vergata
Dipartimento di Ingegneria
Elettronica
Via di Tor Vergata, 110
I 00133 Roma, Italy
Tel: +396 7259 7444
Fax: +396 7259 7435
vatalaro@ing.uniroma2.it

Ottawa, Ontario

Three double lectures on Visual Communications were delivered by staff of Rensselaer Polytechnic early last year. Part I, on Image Coding was given by Dr. W. Papllan on

February 17 and March 1, 1999. Part II on Video Coding, on March 3 and 22, was delivered by Dr. John Woods, and finally Part III, on Transmission, was given by Dr. I. Modestino on March 24 and April 19, 1999. All attracted 30 participants, including 15 guests.

On November 16, 1999, Mr. Kim Lockheed from EMR Canada spoke on GPS in Canada & D-GPS in real time to 18 attendees, including 10 guests.

Philadelphia, Pennsylvania

Their series of monthly meetings included on November 10, 1999 a talk by Mr. John LaForce from SEPTA on 'A Positive Train Control System for SEPTA's Light Rail Tunnel' to a total of 48 people. Earlier this year, two speakers from SYSTRA Consulting gave talks. 27 people listened to Mr. Warren Sims on Tren Urbano Rapid Transit System on the 19th of January, while on February 9, 2000, 22 attended to hear Mr. Ed Bresslin speak on the Staten Island Railway Signal Modernization Project.

Tokyo, Japan

Dr. Masaharu Hata from NTTdocomo spoke on Recent Standardization and Development Activities toward the IMT - 2000 on November 25, 1999. 150 attended.

Mr. Sam R. McConnaughey from Matsushita Communications, America visited on April 14, 1999 to give a talk on Mobile Communications - The Past, Present, and Future to an audience of 250, including 150 guests.

Prof. Ogose from Kagawa University presented a report on VTC99-Spring in Houston, which was also co-authored by Prof. Horikoshi from Gumma University, on August 26, 1999 to a meeting of 30, including 10 guests.

On December 9, 1999, Dr. Shunsuko Finjiwara from Railway Technical Research gave a talk on the On-Going JR MAGLEV Development. 20 people attended.

VTC2000-Spring Working Team Meetings have also been held about every two weeks during the past year.

VTS News

Al Gross Awarded Edwin Howard Armstrong Achievement Award

The IEEE has announced that the Edwin Howard Armstrong Achievement Award for 1999 will be presented to Al Gross for his pioneering effort and outstanding contributions over a period of years in the field of interest of the Society. The Citation reads

"Lifetime achievement for pioneering efforts and the development of personal wireless communications systems."

This award presentation will be made to Mr. Gross at the International Conference on Communications June 18-22, 2000 in New Orleans, Louisiana.

VTS Members Elected Fellows

The IEEE elected 248 Fellows as of the 1st of January 2000, ten of whom are members of the Vehicular Technology Society. Congratulations are due to :

Gaston A. Arredondo, of Lucent Technologies, USA, for contributions to and technical leadership in the development and world-wide deployment of wireless systems;

Leonard Joseph Cimini, of AT&T Labs, USA, for contributions to the theory and practice of high-speed wireless communications;

Michel J. Declercq, of the Swiss Federal Institute of Technology, Switzerland, for contributions to innovative design of mixed signal integrated circuits;

Mitsutoshi Hatori, of the University of Tokyo, Japan, for contributions in communication engineering and broadcast engineering;

Hirofumi Matsuo, of Nagasaki University, Japan, for contributions to the education, research and development of efficient power conversion, and switching power conditioning circuits;

Reuven Meidan, of Motorola, Israel, for contributions to terrestrial and satellite-based cellular radio communications;

Vijay K. Nair, of Motorola, USA, for contributions to development of low-power device and integrated circuits;

Soo-Chang Pei, of the National Taiwan University, Taiwan, for contributions to the development of digital eigenfilter design, color image coding and signal compression, and to electrical engineering education in Taiwan;

Nambirajan Seshadri, of AT&T Labs, USA, for contributions to theory and practice of reliable communications over wireless channels; and

Federico Tosco, of CSELT, Italy, for contributions and leadership in technologies and international standards for optical and wireless communications.

VTC2000-Spring

VTC2000-Spring will be taking place in Tokyo, Japan, around the time you receive this issue. A full report on the conference will appear in the next issue.

13th December 1999 VTS Board of Governors Meeting Report

A meeting of the VTS Board of Governors' took place in Atlanta on the 13th of December 1999. Present at the meeting were Kent Johnson, VTS President, who was in the Chair, along with Board of Governor members Charles Backof, Dennis Bodson, Bob Fenton, Bob French, Harvey Glickenstein, Mel Lewis, George McClure, Tom Rubinstein, Eric Schimmel, and Ray Trott. Also present were VTS Secretary Essam Sourour, Jim Worsham, about to take a position on the board, Roger Madden, Conference Board Member, Ed Reedy, IEEE Division 9 Director and Zafar Taqvi of the VTS Conferences committee.

Charles Backof, Treasurer, reported that the VTS is now worth one million dollars. The IEEE is pushing for the "concentrated banking system" for all conferences, where all banking transactions are to be done through IEEE, and the Society is investigating this. Also, the IEEE requests society budgets to include 3% savings, which the VTS does.

Kent Johnson, President, gave his report. He announced that J.R. Cruz, Tom Rubinstein, John Gilson, Anil T. Kripalani, and James A. Worsham are elected as officers for the IEEE VTS for the period from 1/1/2000 to 12/31/2002.

There are still problems in IEEE TAB regarding the new financial model and IEEE branding. There was a vote in

TAB for no confidence in the IEEE board of directors. In addition, TAB unanimously requested the IEEE to stop spending any more money on the branding issue. However, this request was rejected by IEEE.

Kent Johnson reported that James Irvine, the newsletter editor, had made some proposals regarding the VTS newsletter covering its size, subjects to be covered and financial matters. It was agreed that the VTS would cover travel for the newsletter editor at least once a year to attend the VTS BOG meeting, preferably during a VTS annual conference. There was also a discussion on how to support Gaspar Mesina in his role as chapter coordinator. There are no written procedures to form VTS chapters, but it was agreed to base something on guidelines the New Jersey section has on chapter formation. It was noted that chapters could be formed over the Internet, with emails and WebPages, and formation requirements will be chased up with the IEEE.

IEEE TAB has decided that the conference fees for life members should be equal to student members fees. This is already VTS policy.

There is a meeting April 7-8, 2000 for the IEEE publication editors: J. R. Cruz and James Irvine will attend. The IEEE will publish an online publication, IEEE

Xplore™. Readers will be able to access IEEE documents cited in document. IEEE articles will be posted as soon as they pass peer review.

Dennis Bodson, Standards Committee Chair, reported that in the Rail Transit standards developed smoothly. Tom McGean and he are involved. The IEEE Standards Board is meeting January 2000 in Singapore and no problems are expected for the Rail Transit Standards. ITS Standards will be available for on-line subscription from the first quarter of 2000.

The Board agreed for the VTS to act as a sponsor of IEEE-ISTO 5001 1999, a standard developed for the automotive industry, through the IEEE-SA Standards process if request by the ISTO.

Bob Fenton, Convergence Fellowship committee, reported that Bob Mazzola is contacting major automotive facilities to raise additional applicants. He also reported that it is advertised in the IEEE student Journal. The Board approved a motion to provide the winners of any VTS sponsored Fellowship or Scholarship free 5 years membership in VTS and VT Transactions, if they get the basic IEEE membership.

Bob French, VTS representative to the Intelligent Transportation Systems Council, reported that Robert Barrett will serve as the second VTS representative. He is with JPL and has wide experience. The ITS council met in October 1999, with the first Transaction issue is coming out in March 2000. It has 17 member IEEE societies.

Mel Lewis, Conference Coordinator, reported that Zafar Taqvi will join the conference committee and help him in financial matters for future conferences. Also Jim Worsham will help him in past conferences that are not closed. **VTC 99 Spring, Houston**: the seed money was returned to the VTS and other organizations. The net surplus is about \$107k. About \$72k goes to IEEE VTS. **VTC-99 Fall, Amsterdam** was successful, and expects a surplus of about \$9k. **VTC2000 Spring, Tokyo**: Conference proceedings will be available on both CD ROM and paper formats. They cut back on the number of papers due to the limited space. The advance program is ready and mailed to prospective authors and attendees. The expected surplus is \$40k. **VTC2000, Fall, Boston**: A budget has been received and revised. The call for papers is sent out and it is on their website. It includes transportation area. They accept electronic submission for papers. **VTC 01, Spring, Israel**: They have signed for the hotel (Intercontinental Tel Aviv) and submitted a budget. A small delegation will travel to Israel and inspect the preparation. They are expecting most attendees from to come from Europe. **VTC 01, Fall, North Jersey**: The conference will be held in a convention center, using the IEEE conference service. They signed a contract with Sheraton Atlantic City, which is not a Casino hotel. **VTC 02, Spring, Guadalajara**: An answer is awaited from Guadalajara. Eric Schimmel proposed considering a Latin American country as a venue if we do not get a positive answer. **VTC 02, Fall, Vancouver**: The budget is awaited. **VTC 03, Spring, Korea**: A budget has been received, and they have quotes from two hotels. **VTC 03, Fall**: Local people have proposed holding VTC in Birmingham. They have been sent memorandum of understanding. Mel Lewis also reported that he updated the conference handbook and it will be on the VTS website.

Mel Lewis also reported on the **Education Committee**. He gave a presentation in an IEEE meeting for Web Education in Washington DC, organized by IEEE Educational Activities Department (EAD), where he gave a background about the VTS Web Education Course experience. The VTS is ahead of all other IEEE societies in this regard. The VTS has approved a peer reviewed course manuscript prepared by Pat Morreale from Stevens Institute. The course includes multimedia with multiple presenters, and links to other Internet resources. The cost of the course is expected to be about \$300. The IEEE selected the VTS material to be a model template for IEEE Web based courses. When courses are developed, IEEE will provide brand recognition, advertisement and sales for the Web courses from its societies, and IEEE will share the profit. It was agreed to add a second \$10k from the VTS to be spent at the discretion of Mel Lewis to finish the course. Udan Yao will join the VTS education committee to help with this project. It was noted that the IEEE Education Activity is asking for an ITS Web-based course as well.

Ed Reedy, IEEE Division 9 Director, responded to a invitation by Kent Johnson to talk about the IEEE Board of Directors. He noted that the IEEE budget was not balanced for 2000 because of additional items in the information technology area. The budget was approved after modifications, but new financial model was not approved. Regarding the branding issue, he noted that a long discussion took place in the board of director. Most society presidents wanted the kite and the IEEE letters to stay the same. So far no changes have been decided.

Jim Worsham reported as a member in the conference committee, in charge of past conferences that are not closed. The only conferences that are open are VTC 99, Fall, and VTC 99, Spring, which is awaiting an audited financial report.

Tom Rubinstein, webmaster reported that the VTS website had 2000 hits since last meeting, and that he had attended the webmasters meeting in October. A digest of the VTS News is now available on the web site. He has also made a regular revision of new VTS member's material.

Eric Schimmel, representative to the CCIP and ITU, reported that the main CCIP activity is in the communication and information policy committee. They are heavily involved in Internet matters, and are studying possible scenarios for the future of the Internet. On ITU matters, he reported that the main issue is in the 3G wireless systems. The basic decisions have been taken by the task groups and will be submitted by the radio assembly for financial adoption. Some work will need to continue, and a new working party was adopted to continue the remaining work.

Ray Trott, Awards Committee Chairman, reported that the VTS submitted 17 nominees for the Millennium medal. He is looking for nominations for the Stuart Meyer award and recruiting volunteers to judge the best propagation and system papers awards. They will be awarded at VTC2000-Spring.

Harvey Glickenstein, Vice President for Land Transportation discussed the Sperry Board of Award. The board consists of two members from each of the member societies, including IEEE. There are some vacancies on the board.

The Board then discussed the society's perceived identity crisis, in that name of the society (Vehicular Technology) misrepresents the main interest of the VTS members. Roger Madden gave a historical background: In the 1950s, there was a group under the IRE umbrella called the Professional Group on Vehicular Communications. This was the origin of the VTS. In the sixties automotive electronics was a hot issue and the group changed its name to Professional Group on Vehicular Technology. In about 1973 the group was changed to a society, the VTS. The constitution of the VTS states that part of the society interest is in the terrestrial mobile communications. In about 1987 the land transportation group was incorporated

to the VTS, leaving their previous home in the industrial Electronics Society.

The process to change an IEEE society name is complex, and after some discussion it was decided to add a subtitle to the name instead. After a brain storming sessions with Board members suggesting and debating possible subtitles, the subtitle "**Connecting the Mobile World**" was the first choice.

Eric Schimmel took the chair for the final item of business, the election of officers. Kent Johnson was elected President for the coming year and J. R. Cruz was elected Executive Vice President.

Full minutes of this meeting are on the VTS web site.

21st February 2000 Board of Governors' Meeting Report

George F. McClure

The meeting was chaired by President Kent Johnson. Others attending were Charles Backof, treasurer; Dennis Bodson, chairman of the Standards Committee; J. R. Cruz, VTS executive vice president and Transactions editor; Bob Fenton, Convergence Fellowship committee; Bob French, VTS representative to the Intelligent Transportation Systems Council of IEEE (consisting of 18 IEEE societies); John Gilsean, recently elected board member; Harvey Glickenstein, VTS vice president for Land Transportation; Mel Lewis, VTS conferences coordinator; Bob Mazzola, VTS Long Range Planning committee and SAE liaison; George McClure, VTS Conferences Committee and publicity chairman; Sam McConoughey, elected board member; Tom Rubinstein, VTS webmaster and new member liaison; Eric Schimmel, VTS past president, Nomination Committee chairman, and representative to CCIP and ITU; Essam Sourour, VTS secretary; Ray Trott, Awards Committee chairman; and Jim Worsham, recently elected board member and member of the VTS Conferences Committee.

Treasurer Charles Backof reported that the Society is in sound financial condition and in a position to do more for its members. There was discussion about increasing the frequency of the Transactions to six issues per year. It is now running 2500 pages per year, but should be self-sustaining since it has a separate subscription fee. Board members were asked to help identify other projects for

members. Expanding the VTS News is one option, now that it is once again healthy under its new editor, Dr. James Irvine. Moving \$100,000 from the IEEE short-term investment fund to the higher-yielding long-term investment fund was discussed and approved before the end of the meeting.

President Kent Johnson reported on the meeting of the Technical Activities Board held the previous week in New Orleans. There was much discussion about waning industrial support for IEEE activities because the connection to the "bottom line" was not evident. But many tutorials are well-attended, because the return to the employer is more evident. Tutorials held in conjunction with technical conferences are often the reason a conference attendee gets approval to attend the conference. TAB encouraged conference exhibits as another way to get industry involvement.

Wireless communications is increasingly pervasive, in fixed as well as mobile applications. Understandably, various IEEE societies are interested in addressing the area from their point of view. Microwave Theory & Techniques Society has launched a new publication, "IEEE Microwave and Wireless Components Letters," over the opposition of the Antennas & Propagation Society. A TAB committee has been formed to discuss publication of an IEEE-sponsored periodical on wireless. J. R. Cruz will support Kent Johnson as VTS representatives to this



21st February 2000 Board of Governors' Meeting (Photo Mel Lewis)

committee, which includes the Communications Society as well as others.

There was discussion about how VTS could protect its claim to wireless technology. Gaining public awareness through advertising, and mentions in the trade press of such activities as standards, conferences, a calendar of events, notices of VTS-sponsored tutorials and other educational materials, and actions from meetings of the Board of Governors were suggested. Eric Schimmel and Jim Worsham agreed to contact trade publications for advertising rates. Eric Schimmel will compile a list of addresses for trade publications for use with VTS press releases. The wireless networking course being developed jointly by VTS and the Education Activities department will be advertised in the VTS News and in "Potentials", the student magazine. There is a tie-in to membership development here as well.

An e-mail reflector linking all VTS chapters was discussed as a means to improve chapter communications and services, better linking VTS to its chapters. An action item was taken to establish such a reflector. Kent Johnson will appoint a chairman to form a Membership Development Committee. George McClure will assist Gaspar Messina with chapter activities, including development of the Platinum Member concept, using retired members as mentors and as resources for special projects.

Dennis Bodson reported on a Singapore standards meeting. A new on-line subscription service for rail and ITS standards will start mid-year. Recent standards actions are shown on the VTS web site.

J. R. Cruz has retooled the process for papers review to make more steps electronic.

The Board of Governors extended its compliments to Dr. James Irvine for the excellent work he is doing on the VT News. He reports that the May issue should be 24 pages, +/-4 pages.

Bob Fenton has sent out 330 packages announcing the Convergence Fellowship.

Bob French announced that the ITS conference will be held in October in Dearborn, Michigan, back-to-back with Convergence. The ITS magazine has features that can be

reprinted in the VTS News. The IVHS video developed earlier with VTS sponsorship has sold 178 copies. The Board approved \$10,000 in funding for an update to the video.

Mel Lewis reported on the joint development of the Wireless Networking video course. Parts of the course are to be posted on the web at www.stevens-tech.edu. The complete course should be available by June.

Bob Mazzola mentioned that after the Convergence in October, VTS can reprint the new Convergence papers in the VTS News without charge.

George McClure mentioned the possibility for use of the Chapters reflector to promote more programs with chapters, such as repeats of presentations of technical papers from conferences or talks by distinguished lecturers. He expressed interest in joining the Chapters Committee to help with this.

Sam McConoughey expressed concern over the apparent demise of the Propagation Committee, and urged that VTS work on other courses and book topics to be sponsored by VTS. Dennis Bodson agreed to check with IEEE Press on the possibility of reprinting the previous reprint book, "Land-Mobile Communications Engineering," or an update to it.

Tom Rubinstein reported that he had updated the VTS web site with Javascript. It now includes the VT Conference Handbook in PDF, chapter officer duties, etc., and a conference calendar update. The latter is important, since IEEE will not longer be publishing a paper version of the Technical Activities Guide. Tom reports that the site is running some 30 hits per day.

Ray Trott announced that the best papers awards would be announced in Tokyo. Millennium awards would be given during VT conferences in either Tokyo or Boston.

Bob Fenton moved that the chairman of the VT Fellows Committee appoint three other members to the Fellows Committee, although the VTS bylaws are silent on the point. The motion passed.

The next meeting of the Board of Governors will take place during the conference in Tokyo, on May 17, 2000.

PIMRC 2000 – Coming back to London

The 11th IEEE International Symposium on Personal, Indoor and Mobile Radio Communication Conference will be held in London from 18-21 September 2000. The Year 2000 sees the 10th Anniversary of PIMRC with a return to its founding location – London. The aim of the conference is to provide an international forum for experts in communications to promote, discuss and share various issues in the broad field of radio communications and wireless computer networks.

Today PIMRC conference enjoys wide respect and represents a new trend in international conferences, one which is well suited to the evolving global market. PIMRC is uniquely identified by the following features:

- Balance among academic, industry, and governmental organisations

- Truly international technical program endorsed by IEEE and IEE.
- Flexible organisation tailored to the conference venue
- Personal touch and care by the area coordinators, executive committee members and a group of faithful individuals

There will be 56 technical sessions over three days, including 6 Executive Panel discussions. In addition there will be 9 Tutorials covering topics such as UMTS/IMT2000, Wireless Application Protocols (WAP), Mobile IP, Cellular IP, Broadband Radio Access and Smart Antennas.

After a highly successful PIMRC-99 in Japan, which was attended by more than 600 delegates, PIMRC 2000 hopes to attract scientists, engineers and researchers from all over the world to make this a fruitful event.

For more information, please visit www.pimrc2000.com.

Conferences of Interest

The following table shows VT-06 sponsored and co-sponsored conferences as well as related conferences not sponsored by the Society. While every attempt was made to ensure accuracy, you should contact the respective conference committee to confirm date and location.

DATE	CONFERENCE	LOCATION	WEB PAGE
7-12 May 2000	17 th World Telecommunications Congress and ISS2000	Birmingham, United Kingdom	http://www.wtc2000.org
9 May 2000	EMC Fest 2000	Dearborn, MI	http://emc.eaton.com/emcfest2000.htm
15-18 May 2000	VTC2000-Spring	Tokyo, Japan	http://www.convention.co.jp/vtc2000s
17-19 May 2000	AFCEA/IEEE EuroComm 2000	CANCELLED	http://www.eurocomm.org/2000/
14-16 June 2000	3G Wireless 2000	San Francisco, CA	http://delson.org/3g/3gwireless00/
14-16 June 2000	2000 Virginia Tech Symp. on Wireless Personal Comms	Blacksburg, VA	http://www.mprg.ee.vt.edu
18-22 June 2000	Int'l Conference on Communications ICC '00	New Orleans, LA	http://www.icc00.org
10-12 July 2000	Wireless '00	Calgary, AB	http://www.cal.trlabs.ca/wireless
10-13 July 2000	HF Radio 2000	London, United Kingdom	http://www.iee.org.uk/conf/HFRadio/
16-21 July 2000	AP-S International Symposium / Radio Science Meeting	Salt Lake City UT	http://www.caeme.elen.utah.edu/aps2000
22-25 August 2000	ISAP	Fukuoka, Japan	http://www.crl.go.jp/pub/ISAP2000/
10-13 September 2000	RAWCON '00	Denver, CO	http://rawcon.org
12-14 September 2000	European Wireless 2000	Dresden, Germany	http://www.comnets.rwth-aachen.de/Wireless2000/
18-21 September 2000	PIMRC '00	London, United Kingdom	http://www.pimrc2000.com
24-28 September 2000	VTC2000-Fall	Boston, MA	http://www.vtc2000.org
1-3 October 2000	3rd IEEE Conf. on Intelligent Trans. Sys. ITSC-2000	Dearborn, MI	http://www.ewh.ieee.org/tc/its/itsc2000/cfp-itsc-2000.html
1-4 October 2000	Mobile Communications Summit 2000	Galway, Ireland	http://www.mobilesummit.ie/
4-5 October 2000	2000 European Conference on Wireless Technologies	Paris, France	http://www.eumw.com
4-5 October 2000	IV 2000 IEEE Intelligent Vehicles Symposium	Dearborn, MI	http://WWW.CE.UniPR.IT/iv2000/
16-18 October 2000	Convergence 2000	Dearborn, MI	http://www.convergence2000.org
6-8 November 2000	APWC '00	Waltham, MA	http://www.eece.unm.edu/apwc2000
12-15 November 2000	WPMC-2000	Bangkok, Thailand	http://www.tc.ait.ac.th/wpmc.htm
27 November – 1 December 2000	Globecom 2000	San Francisco, CA	http://delson.org/si/gc00/
17-20 December 2000	ICPWC '00	Hyderbad, India	http://www.citr.ece.uvic.ca/icpwc2000
20-22 February 2001	EPMCC 2001	Vienna, Austria	http://www.epmcc.com
6-9 May 2001	VTC '01/Spring,	Tel-Aviv, Israel	http://www.congress.co.il/ieee_new/
7-11 October 2001	VTC '01/Fall	Atlantic City, NJ	http://www.fallvtc2001.com/index.htm
Spring 2002	VTC '02/Spring	Region 9	mailto:
September 2002	VTC '02/Fall	Victoria, BC	bhargava@engr.UVic.CA
Spring 2003	VTC '03/Spring	Seoul, Korea	mailto:m.lewis@ieee.org

This list is based upon the conference calendar at our web site, which is updated more frequently than this list can be. To access it go to the following URL: <http://www.vtsociety.org/>, then click on "Conference List" in the left frame.

Corrections and additions to this list are most welcome. We are particularly interested in adding listings for Automotive and Transportation conferences. Please send corrections and additions to Tom Rubinstein at t.rubinstein@ieee.org.