

Mario P. Vecchi

Publications, Technical Reports and Conferences

M.P. Vecchi, "**Cablemodems and HFC Technology**", Broadband Access Alternatives: Reaching for the Customer, *Engineering Conference NetWorld+InterOp98*, Las Vegas, May 4-8, 1998.

M.P. Vecchi, "**Broadband IP Services over cable HFC Networks**", *Reacciun Visionarios 98*, Caracas, Venezuela, April 22-24, 1998.

M.P. Vecchi, "**The Impact of Media Convergence on the Way We Do Business**", *Business Online 97 Conference*, San Francisco, June 24, 1997.

"**Architectural Specification for the Excalibur Group Road Runner System**", *joint DEC-TWC Technical Memorandum*, May 22, 1997.

"**Functional Specification for the Excalibur Group Road Runner System**", *joint DEC-TWC Technical Memorandum*, May 21, 1997.

M.P. Vecchi, "**Time Warner's Road Runner Service**", *SCTE Conference on Emerging Technologies*, Nashville, TN, January 9, 1997.

"**Design Specification of PC Online Service System for Time Warner New England Division**", *joint Toshiba-TWC Technical Memorandum*, September 4, 1996.

"**Design Specification of PC Online Service System for Time Warner Cable San Diego Division**", *joint Toshiba-TWC Technical Memorandum*, August 30, 1996.

D. Clark, V. Cerf, R. Shelton and M.P. Vecchi, "**The Next Generation Internet**", *Proc. Harvard Conference on the Internet and Society*, Cambridge, MA, May 29-31, 1996 (O'Reilly & Assoc. publishers).

M.P. Vecchi, "**Excalibur architecture: high-speed IP services to home PCs**", *Proc. 36th. Internet Engineering Task Force*, pp 217-221, Montreal, Canada, June 24-28, 1996.

M.P. Vecchi, "**Line Runner: Bandwidth and Traffic Guidelines**", *Excalibur Group Technical Memorandum*, February 27, 1996.

K. Lacy and M.P. Vecchi, "**Line Runner, Operational Support Requirements**", *Excalibur Group Technical Memorandum*, January 5, 1996.

M. P. Vecchi, "**IPng Requirements for the Cable Television Industry**", *IPng Internet Protocol Next Generation*, Eds. S.O. Bradner and A. Mankin, Addison-Wesley, 1996.

M.P. Vecchi, "**Broadband Networks and Services: Architecture and Control**", *IEEE Communications Magazine*, pp 24-32, v 33, N. 8, August 1995.

"**Excalibur Functional Requirements for Full Deployment**", *joint HP-TWC Technical Memorandum*, November 5, 1995.

"**Excalibur: Early Ramp Architecture**", *joint HP-TWC Technical Memorandum*, May 2, 1995.

M.P. Vecchi and M. Adams, "**Traffic Management for Highly Interactive Transactional System**", National Cable Television Association Conference (NCTA'95), Dallas, TX, May 1995.

M.P. Vecchi, "**High-Speed Data Services: Business, Technology and Operations**", invited talk, *CableLabs Winter Conference*, Santa Barbara, CA, February 1995.

K. Wright and M.P. Vecchi, "**Residential Cable Network Requirements for Interactive Multimedia**", *SCTE Conference on Emerging Technologies*, Orlando, FL, January 1995.

M.P. Vecchi, "**OSS/BSS for Future Cable Full Service Networks**", invited talk, *1994 National Communications Forum (ComForum'94)*, Chicago, IL, September 1994.

M.P. Vecchi, "**ATM in the Full Service Network Trial**", invited talk, *1994 National Communications Forum (ComForum'94)*, Chicago, IL, September 1994.

M. P. Vecchi, "**IPng Requirements: A Cable Television Industry Viewpoint**", *Internet Engineering Task Force (IETF) RFC1686*, August 1994.

M.P. Vecchi, "**The Full Service Network Orlando Trial**", invited talk, *InterOp'94 Executive Symposium*, Las Vegas, NV, May 1994.

M.P. Vecchi, "**PC-based Services: Home and Business-to-home Datacom**", strategic business proposal presented to *Time Warner Cable FSN Executive Steering Committee*, Stamford, CT, April 7, 1994.

M.P. Vecchi, "**Defining the Full Service Network Concept**", invited talk, *CableLabs Winter Conference*, Scottsdale, AZ, March 1994.

B.A. Coan, G. Gopal, G. Herman, W.E. Leland, V. Mak, R.C. Sekar, M.P. Vecchi, A. Weinrib and S. Wu, "**The Touring Machine System (Ver. 3): An Open Distributed Platform for Information Networking Applications**", *Telecommunications Information Networking Architecture Conference (TINA'93)*, Turin, Italy, September 1993.

L. Bahler, S. Loeb, V. Mak, M.P. Vecchi and S-Y. Wu, "**The Touring Machine Systems Management Architecture - A Position Paper**", *IEEE First Int'l. Workshop on System Management*, Los Angeles, CA, April 1993.

M. Arango, L. Bahler, P. Bates, M. Cochinwala, D. Cohrs, R. Fish, G. Gopal, N. Griffeth, G. Herman, T. Hickey, K.C. Lee, W. Leland, C. Lowery, V. Mak, J. Patterson, L. Ruston, M. Segal, R.C. Sekar, M.P. Vecchi, A. Weinrib and S. Wu, "**The Touring Machine System**", *Communications of the ACM*, vol. 40, No. 1, p. 78, January 1993.

J.W. Rembert, T. Stelzer and M.P. Vecchi, "**Service Activation and Usage Measurement: Operations Support for the Touring Machine System**", *Bellcore TM-ARH-021646*, July 1992.

M. Arango, P. Bates, R. Fish, G. Gopal, N. Griffeth, G. Herman, T. Hickey, W. Leland, C. Lowery, V. Mak, J. Patterson, L. Ruston, M. Segal, M.P. Vecchi, A. Weinrib and S. Wu, "**Touring Machine: a Software Platform for Distributed Multimedia Applications**", *1992 IFIP Int'l. Conf. on Upper Layer Protocols, Architectures and Applications*, Vancouver, Canada, May 1992.

M. Arango, P. Bates, G. Gopal, N. Griffeth, G. Herman, T. Hickey, W. Leland, V. Mak, L. Ruston, M. Segal, M.P. Vecchi, A. Weinrib and S. Wu, "**Touring Machine: a Software Infrastructure to Support Multimedia Communications**", *4th. IEEE COMSOC Int'l. Workshop on Multimedia Communications, (MULTIMEDIA'92)*, Monterey, California, April 1992.

G. Gopal, G. Herman and M.P. Vecchi, "**The Touring Machine Project: Towards a Public Network Platform for Multimedia Applications**", *8th. Int'l. Conf. on Software Engineering for Telecom. Systems and Services (SETSS'92)*, Florence, Italy, March 1992.

B.A. Coan, W.E. Leland, M.P. Vecchi, A. Weinrib and L.T. Wu, "**Using Distributed Topology Update and Preplanned Configurations to Achieve Trunk Network Survivability**", *IEEE Trans. on Reliability (special issue on Design for Reliability of Telecommunication Systems and Services)* 40, 404 (1991).

E.I. Tsai, B.A. Coan, M. Kerner and M.P. Vecchi, "**A Comparison of Strategies for Survivable Network Design: Reconfigurable and Conventional Approaches**", *IEEE Global Comm. Conf. (Globecom'90)*, San Diego, CA (1990).

B.A. Coan, M.P. Vecchi and L.T. Wu, "**A Distributed Protocol to Improve the Survivability of Trunk Networks**", *Int'l. Switching Symposium (ISS'90)*, Stockholm, Sweden (1990).

H. Kobrinski, M.P. Vecchi, T.E. Chapuran, J.B. Georges, C.E. Zha, C. Caneau, S.G. Menocal, P.S.D. Lin, A.S. Gozdz and F.J. Favire, "**Simultaneous Fast Wavelength Switching and Intensity Modulation Using a Tunable DBR Laser**", *IEEE Photonics Tech. Lett.* 2, 139 (1990).

T.E. Chapuran, H. Kobrinski, M.P. Vecchi, C.E. Zha, C. Caneau, S.G. Menocal, P.S.D. Lin, A.S. Gozdz and F.J. Favire, "**Accessing the Large Quasi-Continuous Tuning Range of a 3-Section DBR Laser**", *OSA/IEEE Optical Fiber Commun. Conf. (OFC'90)*, San Francisco, (1990).

H. Kobrinski, M.P. Vecchi, T.E. Chapuran, J.B. Georges, C.E. Zha, C. Caneau, S.G. Menocal, P.S.D. Lin, A.S. Gozdz and F.J. Favire, "**Fast Multiwavelength Switching and Simultaneous FSK Modulation using a Tunable DBR Laser**", *Eletron. Lett.* 26, 308 (1990).

H. Kobrinski, M.P. Vecchi, T.E. Chapuran, J.B. Georges, C.E. Zha, C. Caneau, S.G. Menocal, P.S.D. Lin, A.S. Gozdz and F.J. Favire, "**Simultaneous Fast Wavelength-Switching and Intensity Modulation using a Tunable DBR Laser**", *IEEE Photonics Tech. Lett.* 2, 139 (1990).

H. Kobrinski, M.P. Vecchi, M.S. Goodman, E.L. Goldstein, T.E. Chapuran, J.M. Cooper, C.E. Zha and S.G. Menocal, "**Fast Wavelength-Switching of Laser Transmitters and Amplifiers**", *IEEE J. Selected Areas Commun. (J. Lightwave Tech. joint issue on Dense WDM Techniques)* 8, 1190-1202 (1990).

M.S. Goodman, H. Kobrinski, M.P. Vecchi, R.M. Bulley and J.L. Gimlett, "**The LAMBANET Multiwavelength Network: Architecture, Applications and Demonstrations**", *IEEE J. Selected Areas Commun. (J. Lightwave Tech. joint issue on Dense WDM Techniques)* 8, 995-1004 (1990).

M.P. Vecchi, "**Multiwavelength Architectures for BISDN Telecommunications Optical Networks**", invited paper, *Optical Society Conference, OSA/LEOS Joint Symposium 1989*, October 89, Orlando, Florida.

H. Kobrinski, M.P. Vecchi, T.E. Chapuran, J.B. Georges, C.E. Zha, C. Caneau, S.G. Menocal, P.S.D. Lin, A.S. Gozdz and F.J. Favire, "**Fast Multiwavelength Switching and Simultaneous FSK Modulation Using a 3-Section DBR Laser**", *15th. European Conf. on Optical Commun. (ECOC'89)*, Gothenburg, Sweden (1989).

- M.P. Vecchi, "**Component Technologies for Multiwavelength Broadband Packet Switching Systems**", invited paper, *7th Int'l. Integrated Optics and Optical Fiber Commun. (IOOC'89)*, July 89, Kobe, Japan.
- E. Arthurs, M.S. Goodman, H. Kobrinski and M.P. Vecchi, "**A Broadband Optoelectronic Packet Switching System**", *IEEE Trans. on Commun.* 37, 645 (1989).
- H. Kobrinski, M.P. Vecchi, T.E. Chapuran, J.B. Georges, C.E. Zah, C. Caneau, S.G. Menocal, P.S.D. Lin, A.S. Godz and F.J. Favire, "**Simultaneous Fast Wavelength-Switching and Direct Data Modulation Using a 3-section DBR Laser with a 2.2 nm Continuous Tuning Range**", *OSA/IEEE Optical Fiber Commun. Conf. (OFC'89)*, Postdeadline paper, Houston, TX (1989).
- J.M. Cooper, J. Dixon, M.S. Goodman, H. Kobrinski, M.P. Vecchi, M. Tur, S.G. Menocal and S. Tsuji, "**Nanosecond Tunable Double-Section DFB Laser for Dynamic Wavelength Addressing Applications**", *Electron. Lett.* 24, 1237 (1988).
- H. Kobrinski, M.P. Vecchi, E.L. Goldstein and R.M. Bulley, "**Wavelength Selection with Nanosecond Switching Times Using Distributed-Feedback Optical Amplifiers**", *Electron. Lett.* 24, 969 (1988).
- E. Arthurs, M.S. Goodman, H. Kobrinski and M.P. Vecchi, "**HYPASS: An Optoelectronic Hybrid Packet Switching System**", *IEEE J. on Selected Areas Commun.* 6, 1500 (1988).
- H. Kobrinski, E. Arthurs, R.M. Bulley, J.M. Cooper, E.L. Goldstein, M.S. Goodman and M.P. Vecchi, "**An Optoelectronic Packet Switch Utilizing Fast Wavelength Tuning**", *IEEE Global Telecommun. Conf. (Globecom'88)*, Hollywood, Florida (1988).
- M.S. Goodman, E. Arthurs, J.M. Cooper, H. Kobrinski and M.P. Vecchi, "**Demonstration of Fast Wavelength Tuning for a High-Performance Packet Switch**", *14th. European Conf. on Optical Commun. (ECOC'88)*, Brighton, England (1988).
- M.P. Vecchi, H. Kobrinski, E.L. Goldstein and R.M. Bulley, "**Wavelength Selection with Nanosecond Switching Times Using Distributed-Feedback Optical Amplifiers**", *14th. European Conf. on Optical Commun. (ECOC'88)*, Brighton, England (1988).
- E.L. Goldstein, H. Kobrinski, M.P. Vecchi and R.M. Bulley, "**Nanosecond Wavelength Selection with 10-dB Net Gain in a Subthreshold DFB Laser Amplifier**", *11th. IEEE International Semiconductor Laser Conf.*, Boston, Mass (1988).

J.M. Cooper, J. Dixon, M.S. Goodman, H. Kobrinski, M.P. Vecchi, E. Arthurs, S.G. Menocal, M. Tur and S. Tsuji, "**Nanosecond Wavelength Switching with a Double-Section Distributed-Feedback Laser**", *OSA/IEEE Conf. on Lasers and Electrooptics (CLEO'88)*, Anaheim, Calif. (1988).

E. Arthurs, J.M. Cooper, M.S. Goodman, H. Kobrinski, M. Tur and M.P. Vecchi, "**An Optical Multiwavelength Crossconnect Architecture for Parallel-Processing Computers**", *Electron. Lett.* 24, 119(1988).

M.P. Vecchi, R.M. Bulley, M.S. Goodman, H. Kobrinski and C.A. Brackett, "**High Bit-Rate Measurements in the LAMBDANET Multiwavelength Optical Star Network**", *OSA/IEEE Optical Fiber Commun. Conf. (OFC'88)*, New Orleans, Louisiana (1988).

M.P. Vecchi and J.A. Salehi, "**Neuromorphic Networks for Optical Communications and Signal Processing**", *Tech. Digest of IEEE Neural Information Processing Conf.*, Denver, Colorado (1987).

E. Arthurs, R.M. Bulley, M.S. Goodman, H. Kobrinski, M.P. Vecchi and J.L. Gimlett, "**A Fast Optical Crossconnect for Parallel Processing Computers**", *13th. European Conf. on Optical Commun. (ECOC'87)*, Helsinki, Finland (1987).

R.M. Bulley, M.S. Goodman, H. Kobrinski, C.N. Lo, K.W. Loh, M.P. Vecchi, C.A. Brackett, L. Curtis and J.L. Gimlett, "**Experimental Demonstration of LAMBDANET: A Multiwavelength Optical Network**", *13th. European Conf. on Optical Commun. (ECOC'87)*, Helsinki, Finland (1987).

H. Kobrinski, R.M. Bulley, M.S. Goodman, M.P. Vecchi, C.A. Brackett, L. Curtis and J.L. Gimlett, "**Demonstration of High Capacity in the LAMBDANET Architecture: A Multiwavelength Optical Network**", *Electron. Lett.* 23, 824 (1987).

M.S. Goodman, C.A. Brackett, R.M. Bulley, C.N. Lo, H. Kobrinski and M.P. Vecchi, "**Design and Demonstration of the LAMBDANET System: A Multiwavelength Optical Network**", *IEEE Global Telecommun. Conf. (Globecom'87)*, Tokyo, Japan (1987).

M.S. Goodman, H. Kobrinski, M.P. Vecchi and K.D. Cooley, "**An Application of the LAMBDANET Multiwavelength Architecture: Wideband Virtual Networks**", *Tech. Digest NFOEC 1987*, San Francisco (1987).

Vecchi M.P. and Kirkpatrick S., "**Global Wiring by Simulated Annealing**", *IEEE Trans on CAD of Integrated Circuits and Systems CAD-2*, 215 (1983).

- Kirkpatrick S., Gelatt C.D. and Vecchi M.P., "**Optimization by Simulated Annealing**", *Science* 220, 671 (1983).
- Oelhafen P., Vecchi M.P., Freeouf J.L. and Moruzzi V.L., "**The Delocalized d-electrons in the Semimagnetic Alloy Cd(1-x)Mn(x)Te**", *Solid State Comm* 44, 1547 (1982).
- Abreu R.A., Girit W. and Vecchi M.P., "**Temperature Dependence of the Absorption Edge in Cd(1-x)Mn(x)Te**", *Physics Letters A* 85A, 399 (1981).
- Vecchi M.P. and Ramos J., "**Radiative Recombination Measurements in CuInS(2)**", *Journal of Applied Physics* 52, 2958 (1981).
- Vecchi M.P., Girit W. and Videla L., "**Photoluminescence Studies of the Mn²⁺ d-levels in Cd(1-x)Mn(x)Te**", *Applied Physics Letters* 38, 99 (1981).
- Vecchi M.P., "**Celdas Solares Fotovoltaicas**", *Acta Cientifica Venezolana* 30, 337 (1979).
- Stankiewicz J., Girit W., Ramos J. and Vecchi M.P., "**Electrical and Optical Properties of CuGaSe(2)**", *Solar Energy Materials* 1, 369 (1979).
- Vecchi M.P., "**Integrated Tandem Solar Cells**", *Journal of Solar Energy* 22, 383 (1979).
- Vecchi M.P., Ramos J. and Girit W., "**Photoluminescence in CuGaSe(2)**", *Solid-State Electronics* 21, 1609 (1978).
- Vecchi M.P., and Nava R., "**Propagation of Ultrasonic Shear Waves in Gamma-Ray Irradiated Quartz Crystals**", *Applied Physics* 13, 171 (1977).
- Vecchi M.P., Mendez E. and Dresselhaus M.S., "**Temperature Dependence of the Band Parameters in Bi and Bi(1-x)Sb(x) Alloys**", *Proceedings of the 13th. International Conference on the Physics of Semiconductors*, ed. F. G. Fumi (Marves, Roma), 459 (1976).
- Wulf A. and Vecchi M.P., "**Remarks on the Proton NMR of Di-Heptyl-Oxyazoxy Benzene in the Smectic-C Phase**", *Journal of Molecular Crystals and Liquid Crystals* 36, 165 (1976).
- Vecchi M.P., Mendez E. and Dresselhaus M.S., "**High-Field Magneto Optical Studies in Bi(1-x)Sb(x) Alloys**", *Physica* 89B, 150 (1976).
- Nava R., Vecchi M.P., Romero J. and Fernandez B., "**Akhiezer Damping and the Thermal Conductivity of Pure and Impure Dielectrics**", *Physical Review B* 14, 800 (1976).

Vecchi M.P., Pereira J.R. and Dresselhaus M.S., "**Anomalies in the Magnetoreflexion Spectrum of Bismuth in the Low-Quantum-Number Limit**", *Physical Review B14*, 298 (1976).

Vecchi M.P., Pereira J.R. and Dresselhaus M.S., "**Magnetic Field Induced Semimetal-Semiconductor Transition in Bismuth**", *Proceedings of the 12th International Conference on the Physics of Semiconductors*, ed. M.H. Pilkahun (B.G. Teubner, Stuttgart), 1181 (1974).

Vecchi M.P. and Dresselhaus M.S., "**Temperature Dependence of the Band Parameters of Bismuth**", *Physical Review B10*, 771 (1974).

Vecchi M.P. and Dresselhaus M.S., "**Magnetic Energy Levels of Bismuth in the Low-Quantum-Number Limit**", *Physical Review B9*, 3257 (1974).

Vecchi M.P. and Dresselhaus M.S., "**Magnetic Energy Levels and the Temperature Dependence of the Band Parameters of Bismuth**", *Proc. of the International Conference on the Semimetals and Narrow-Gap Semiconductors*, Nice-Cardiff (1973).

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Patents

"**Spectrum Manager for Communication Networks**", M.P. Vecchi and J. Vaughan, US Patent 5,898,693, 27 April 1999.

"**A Distributed Protocol to Improve the Survivability of Trunk Networks**", B.A. Coan, M.P. Vecchi and L.T. Wu, US Patent 5,093,824, 3 March 1992.

"**HYPASS: An Optoelectronic Hybrid Packet Switching System**", E. Arthurs, M.S. Goodman, H. Kobrinski and M.P. Vecchi, US Patent 4,873,681, 10 October 1989.

"**Fast Optical Cross-Connect for Parallel Processing Computers**", E. Arthurs, M.S. Goodman, H. Kobrinski and M.P. Vecchi, US Patent 4,834,483, 30 May 1989.

"**Protector Electronico Contra Alto/Bajo Voltaje**", P.A. Vecchi and M.P. Vecchi, Titulo de Patente de Invencion 39.221, Venezuela, 14 May 1981.