Conference Report

The theme of the conference was "A Meeting Place for Converging Technologies and People". This year's Tencon incorporated ATNAC 2005 and this made it possible to include multiple streams and guest speakers to address the many exciting issues emerging from the area of telecommunication networks and applications.

Over 800 paper submissions were received for the conference and approximately 525 papers for oral and poster presentation were accepted. Most papers represented collaborations between a number of authors and, for the accepted papers in the conference, there are over 1300 individuals involved - from approximately 40 different countries in the IEEE Region 10 and beyond. In addition to the large number of papers from Australia, substantial contributions were also made by authors coming from China, India, Japan, Thailand, Taiwan, Malaysia and Korea.

The conference chair was Dr Hugh Bradlow, CTO Telstra Research and he is pictured above at the opening ceremony. Technical Program Chair was Professor Richard Harris (Massey University).

Approximately 12 parallel technical sessions were held during the early stages of the conference and gradually reducing these as the conference progressed.

The Tencon 05 conference was judged to be very successful both from an organisational point of view and from a financial point of view.

Keynote speeches were presented by the following people.

Keynote Speaker: Dr Radia Perlman (Sun Microsystems)

Radia Perlman's work has had a profound effect on the world of networking. She designed the spanning tree algorithm used by bridges, and many of the key algorithms that make link state protocols (IS-IS, OSPF) robust, manageable, and scalable. Her work has also been seminal in routing security and tangible computing. Recent contributions include secure digital shredding of data, strong password protocols, transparent routing, scalable PKI-based cross-organizational authentication and authorization, and analysis and redesign of IKE (the authentication handshake for IPsec). One of her missions is to get people to think critically about networking, rather than just

memorizing the details of what happens to be currently deployed, or believing everything they hear or see in print. Titles of recent talks she has given include "How to build an insecure system out of perfectly good cryptography", "Things we all know about network protocols that aren't true", and "Miss Manners Meets the IETF".

She is currently Distinguished Engineer at Sun Microsystems Laboratories. She is also a series advisor for Prentice Hall, and serves on both the routing and security directorates of IETF.

She is the author of "Interconnections: Bridges, Routers, Switches, and Internetworking Protocols", and co-author of "Network Security: Private Communication in a Public World". Both books are popular both with engineers and as university textbooks. She has taught graduate and undergraduate level courses at Harvard, MIT, and University of Washington. Holding approximately 70 patents, she was named Silicon Valley Intellectual Property Law Association's 2004 Inventor of the year.

Radia Perlman has a PhD in computer science from MIT and an honorary doctorate from KTH, the Royal Institute of Technology, Sweden.

Invited Speaker: Professor fred harris (San Diego State University)

fredric j harris holds the **CUBIC** Signal Processing Chair of the Communication Systems and Signal Processing Institute at San Diego State University where since 1967 he has taught courses in areas related to Digital Signal Processing and Communication Systems. He has extensive practical experience in communication systems, high performance modems, sonar and advanced radar systems and high performance laboratory instrumentation. He holds a number of patents on digital receiver and DSP technology and lectures throughout the world on DSP applications. He consults for organizations requiring high performance, cost effective DSP solutions.

He is well published and has contributed to a number of books on DSP. In 1990 and 1991 he was the Technical and then the General Chair of the Asilomar Conference on Signals, Systems, and Computers that meets annually in Pacific Grove, California. He is the 2003 Technical Chair of the Software Defined Radio Conference. In 2003 he became a Fellow of the IEEE and was cited for contributions of DSP to communications systems. His education includes a Bachelor's Degree in EE from the Polytechnic Institute of Brooklyn (1961), a Master's Degree in EE from San Diego State University (1967) and Ph.D. work at the University of California, San Diego (1968-1973).

He is the traditional absent-minded professor and drives secretaries and editors to distraction by requesting lower case letters when spelling his name. He roams the world collecting old toys and slide-rules and riding old railways.

Invited Speaker: Dr Malin Premaratne (Monash University)

Malin Premaratne received the BSc(Maths.) and BE(Elec.) with first class honours from the University of Melbourne, Australia, in 1995 and Ph.D from the University of Melbourne, Australia, in 1998. From 1998 to 2000, he was with the Photonics Research Laboratory, a division of the Australian Photonics Cooperative Research Centre (APCRC), the University of Melbourne, Melbourne, Australia, where he was the co-project leader of APCRC Optical Amplifier Project. During this period he worked with Telstra, Australia and Hewlett Packard, USA through the University of Melbourne. From 2000 - 2003 he was involved with several leading startups in photonic area either as an employee or a consultant.

During this period, he has also served in the editorial boards of SPIE/Kluwer publishers and Wiley publishers in optical communications area. From 2001-2003, he worked as the Product Manger (Research and Development) of VPIsystems Optical Systems group.

Since 2000, he has been appointed as a Senior Associate/Senior Fellow of the University of Melbourne, Australia. Since 2001 he also serve as the Chairman of IEEE Lasers and Electro-Optics Society in Victoria, Australia.

Dr Premaratne is a senior member of IEEE and since 2003 leads the research program in high performance computing applications to complex system simulation at Advanced Computing and Simulation Laboratory (AXL) at Monash University, Australia. He has published over 75 research papers in the areas of semiconductor lasers, EDFA and Raman amplifiers, optical network design algorithms and numerical simulation techniques. His current research interests include the areas of optical network design, analysis and configuration methods, simulation of optical and electromagnetic interaction with biological and other turbid substances, grid and cluster computing and realistic scene rendering in computer graphics using optical physics based methods.

Invited Speaker: Mike Schwartz (Executive Director, New Generation Systems, Telcordia Technologies)

Mr Schwartz is sponsored by ATNAC 2005

Mike Schwartz is Executive Director in Telcordia Technologies New Generation Systems organization. He is responsible for identifying the impact of technology, regulation, and competition on Telcordia's new software products and solution offerings. His work influences product and solutions investments, marketing plan development, competitive response, distribution and alliance strategies, and international strategies.

Mr. Schwartz's career spans over 37 years in the telecommunications industry. Mr. Schwartz has led organizations responsible for the development of industry technical requirements and standards, and organizations responsible for the development and execution of conformance and interoperability test capabilities. He was responsible for the implementation of a new business within Telcordia to bring Telcordia's technical services to the telecommunications equipment supplier market place.

Mr. Schwartz received his BS (EE) from Rensselaer Polytechnic Institute in New York State, and his MSEE from the University of California-Berkeley.

Mr. Schwartz is a member of the Tau Beta Pi Engineering Honor Society, and a Senior Member of IEEE. He holds a seat on the Council of the **World Telecommunications Congress** and **International Symposium on Services and Local accesS** (ISSLS) and is a former Chairman of the ISSLS Council and its financial board.

Invited Speaker: Professor Ray Jarvis (Monash University)

Ray Jarvis completed his BE (Elec.) and Ph.D. (Elec.) at the University of Western Australia in 1962 and 1968, respectively. After two years at Purdue University he was appointed to the Australian National University (ANU) to teach Computer Science. He was instrumental in establishing the Department of Computer Science at ANU and was its first Head of Department. He joined Monash University in 1985 and established the Intelligent Robotic Research Centre in 1987. He has been the Centre's Director since then. His research interests are in Computer Vision and Robotics. Both robotic manipulators and mobile robots of various sizes have been part of his interests. Most recently he has been working on autonomous and tele-operated vehicles and vessels including a tracked vehicle, several boats, an amphibious craft, an excavator and a half scale Russian built Martian Rover. He has also recently developed a research interest in Humanoid Robotics. From an AI perceptive his main interests are in Computer Vision and Path Planning. He is Director of the recently established Australian Research Council Centre for Perceptive and Intelligent Machines in Complex Environments.