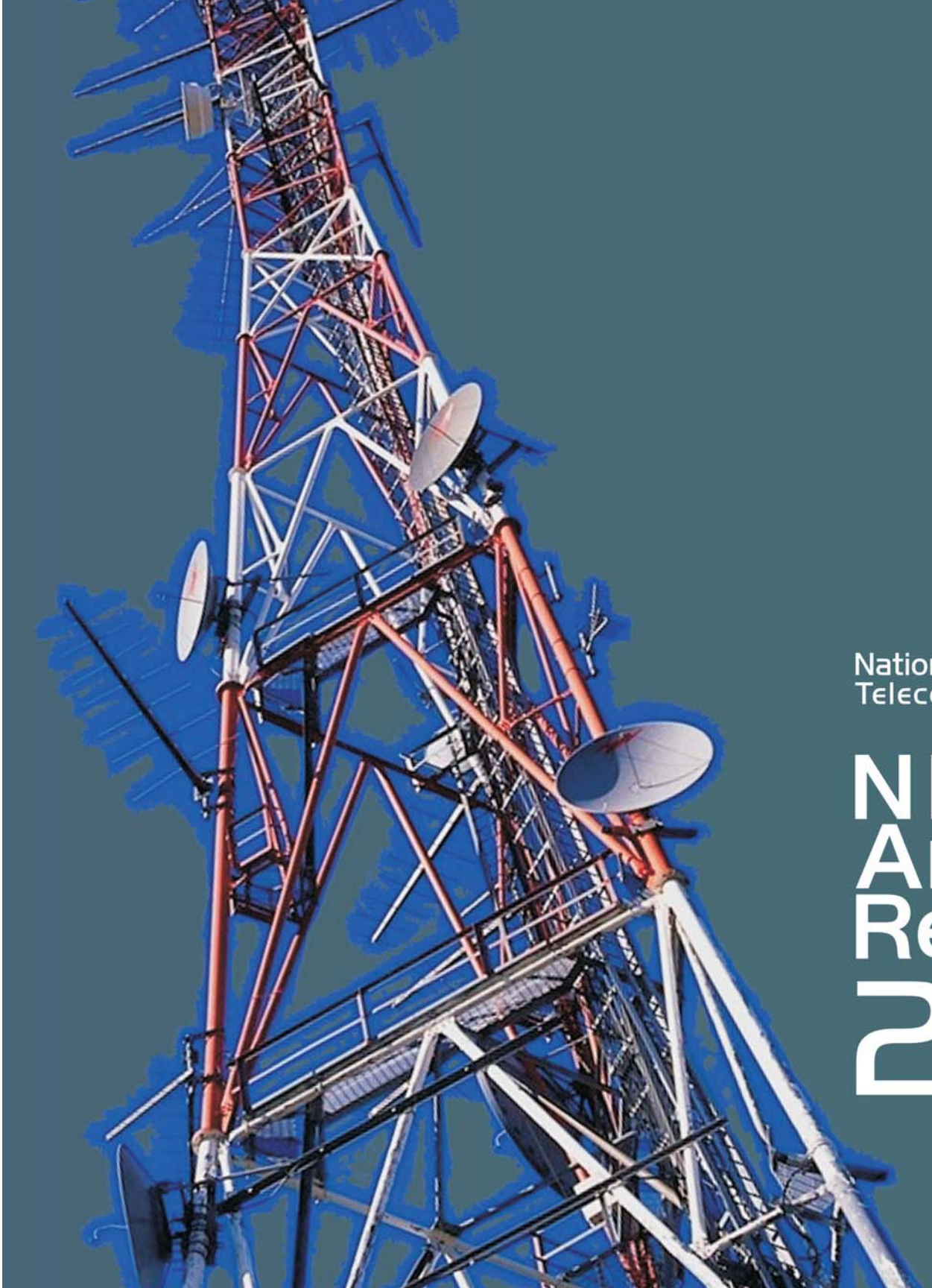

National Public Safety Telecommunications Council

# NPSTC Annual Report 2004

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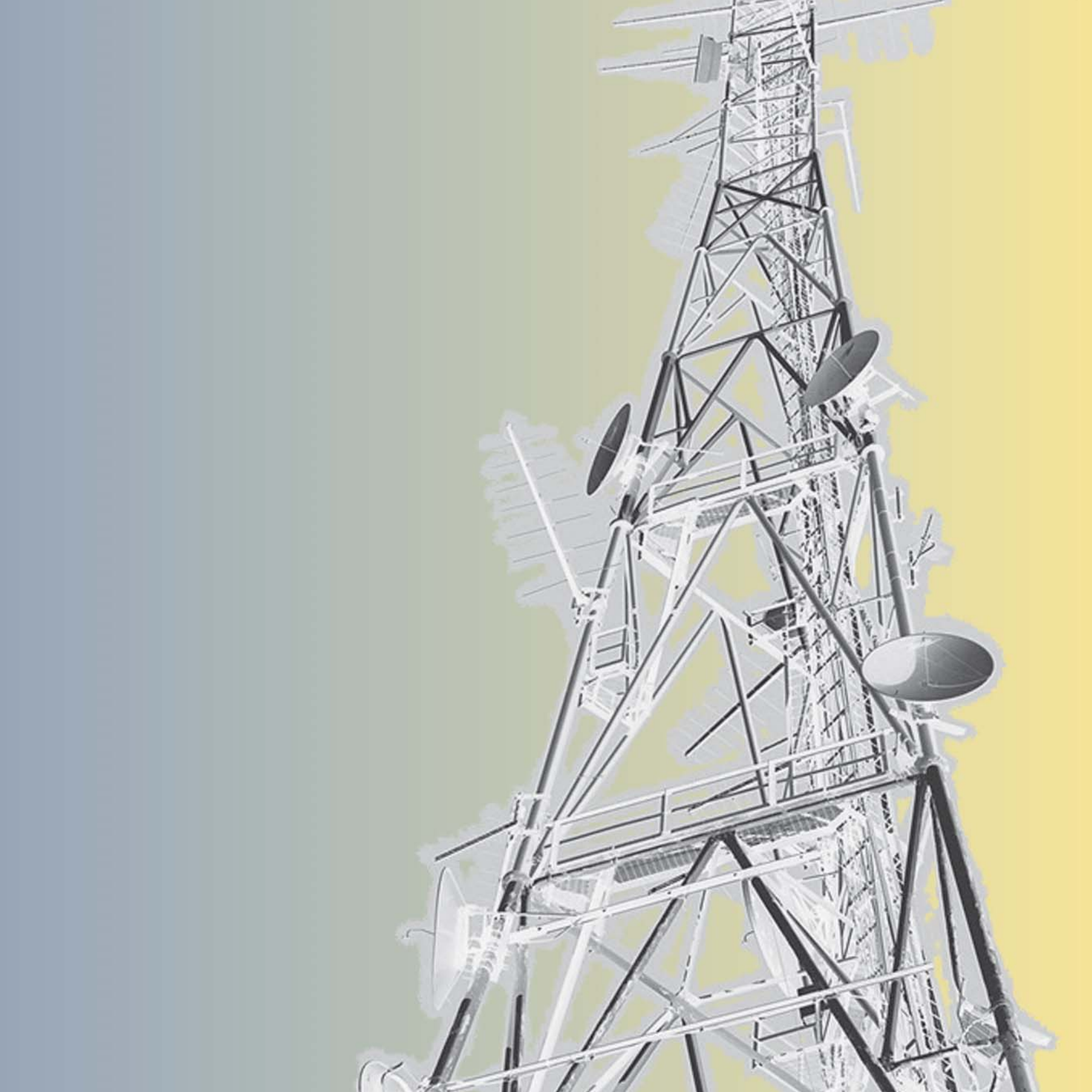
NPSTC
National Public Safety
Telecommunications Council



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**Formed on May 1, 1997, NPSTC is a federation of associations representing public safety telecommunications.** NPSTC was originally formed to encourage and facilitate implementation of the findings and recommendations of the Public Safety Wireless Advisory Committee (PSWAC), established in 1994 by the Federal Communications Commission (FCC) and the National Telecommunications and Information Administration (NTIA) to evaluate the wireless communications needs of local, tribal, state, and federal public safety agencies through the year 2010, identify problems, and recommend possible solutions. NPSTC has since taken on additional responsibilities including implementing the recommendations of the National Coordination Committee (NCC).

This Annual Report 2004 provides highlights of the year's activities and achievements as the collective voice of public safety communications worked to ensure that public safety communications needs are communicated to regulatory bodies impacting our service to the first responder and public safety community.

## NPSTC Member Organizations

American Association of State Highway and Transportation Officials
American Radio Relay League
American Red Cross
Association of Public Safety Communications Officials - International
Forestry Conservation Communications Association
International Association of Chiefs of Police
International Association of Emergency Managers
International Association of Fire Chiefs
International Association of Fish and Wildlife Agencies
International Municipal Signal Association
National Association of State Emergency Medical Services Directors
National Association of State Foresters
National Association of State Telecommunications Directors

## NPSTC Liaison Organizations

Federal Communications Commission
Federal Partnership for Interoperable Communications
Telecommunications Industry Association
U.S. Department of Agriculture
U.S. Department of Homeland Security, SAFECOM Program
Federal Emergency Management Administration
U.S. Department of Interior
U.S. Department of Justice, CommTech Program


# Welcome, from NPSTC Executive Board

*Chair, Marilyn Ward, and Vice Chairs, Douglas Aiken and Harlin McEwen*

Welcome to the first Annual Report of the National Public Safety Telecommunications Council (NPSTC), a federation of 13 associations that came together 7 years ago to provide a collective voice on the vitally important issues that affect public safety telecommunications. In this report, you'll learn how NPSTC was originally formed, its history and early achievements; how NPSTC is organized and supported today by its National Support Office; and more about its three Committees and the individual Working Groups, including biographical sketches of the Executive Committee and Committee Chairs and Co-Chairs.

From left, Harlin McEwen, Marilyn Ward, and Douglas Aiken

NPSTC serves as a standing forum for the exchange of ideas and information, and works to identify and promote methods for funding development of public safety communications systems. NPSTC also performs research, conducting studies of public safety communications, and uses research to stay abreast of user needs. NPSTC communicates information on technology, research, and policy issues to the field through its website at *www.npstc.org* and through its quarterly newsletter, ***spectrum***.

NPSTC submits formal filings to the Federal Communications Commission (FCC) and other appropriate agencies on behalf of public safety telecommunications. NPSTC's first filing to the FCC was in response to FCC Docket 96-86 concerning the initial rules for the 700 MHz public safety band. It was the most detailed filing ever made to the FCC on behalf of public safety and laid the groundwork for many of the FCC's later decisions on the 700 MHz band.

**In 2004, NPSTC successfully petitioned the FCC to modify technical rules for the 4.9 GHz band,** one of NPSTC's most important successes this year. Late in 2004, the FCC adopted a Memorandum Opinion and Order (MO&O) on issues surrounding the 50 MHz allotted to support the broadband wireless needs of local and state public safety agencies in the 4.9 GHz band. As the FCC finalized rules for the band, NPSTC petitioned the Commission to modify some of the technical rules. Subsequently, NPSTC provided specific technical support for its request, creating a very detailed simulation of a public safety communications scenario. The results clearly demonstrated to the FCC that public safety can use this spectrum very effectively without the need to go to a stricter mask, placing constraints on current equipment.

The technical changes which the FCC adopted November 9, 2004, in response to NPSTC's request will facilitate the extension of broadband technologies already being developed for adjacent unlicensed and intelligent transportation bands into the public safety spectrum at 4.9 GHz. This provides public safety the added protection of its own dedicated spectrum that

unlicensed spectrum bands do not provide, along with the benefits of a broader equipment market to facilitate cost-effective communications solutions. NPSTC believes the modified technical rules support the right balance of interference protection and technology availability.

NPSTC is also actively involved in the development of broadband public safety standards for the 4.9 GHz band, which are being developed by the Telecommunications Industry Association (TIA), as well as the core Institute of Electrical and Electronics Engineers (IEEE) 802 standards from which these will be derived. NPSTC users and multiple equipment manufacturers are partnering to develop interoperability standards designed to meet the specific needs of public safety while, at the same time, leveraging technology development from adjacent spectrum bands.

**NPSTC played an active role in the critical resolution of the 800 MHz interference issue,** helping to educate the public safety community, the public, and the FCC on the Consensus Plan for 800 MHz resolution. After many months of discussion, on August 6, 2004, the FCC issued a plan with short— and long—term components for improving public safety communications in the 800 MHz band. In the short term, it requires the implementation of technical standards defining unacceptable interference in the 800 MHz band to address the root cause, by separating incompatible technologies. The plan incorporates the essential elements of the Nextel proposal and provides Nextel with 10 MHz in the 1.9 GHz band, conditional upon fulfillment of the obligations in the Report and Order (R&O). Public safety gains an additional 4.5 MHz as part of the band reconfiguration and Nextel relinquishes all 800 MHz spectrum below 817 MHz/862 MHz. Nextel assumes the full financial responsibility for the cost of relocation of all 800 MHz band public safety systems and other 800 MHz incumbents to their new spectrum assignments with comparable facilities.

**NPSTC supports several Working Groups focused on 700 MHz-one focused on 700 MHz wideband technology and the other on 700 MHz advocacy.** 700 MHz is public safety's "spectrum for the future," and NPSTC Working Groups are focused upon the advocacy, technologies, protection, and deployment of these precious spectrum resources. The Spectrum Advocacy Working Group focuses on the regulatory and educational domains, reacting to FCC matters and consolidating the concerns and recommendations of the public safety community and responding back to the FCC with formal filings. The 700 MHz Wideband Technologies Working Group assesses the newly available 700 MHz technologies and provides guidelines for the deployment and spectrum management of these to maximize the potential benefits to public safety.

**NPSTC works closely with CAPRAD, the Computer Assisted Pre-coordination and Resource Database System,** which has evolved beyond a database into a suite of tools and resources to assist state and regional planners, coordinators, and users to manage the public safety spectrum. The CAPRAD system facilitates inter-regional coordination in the pre-allotment of 700 MHz frequencies and the development of state and regional plans, but has grown to include a number of expanded functions and enhanced features which make it an even more important national resource for public safety spectrum planning and management.

**NPSTC has ensured that public safety has a strong voice in the development of new technologies, particularly Software Defined Radio and Cognitive Radio.** These technologies are vitally important for public safety, both to enhance spectrum efficiency and utilization, and to break down barriers to interoperability. NPSTC representatives serve in leadership roles in the Software Defined Radio Forum (SDRF) on the Spectrum Efficiency and Cognitive Radio Working Groups, and have achieved significant success in steering regulatory activities. NPSTC members also created the Public Safety Special Interest Group (PSIG) within the SDRF that will help focus Forum and NPSTC resources.

**In 2005, NPSTC will be continuing to support critical public safety communications issues**, focusing its attention on monitoring new technology testbeds, assisting Statewide Interoperable Executive Committee (SIEC) development, and working with regulatory bodies in the development and implementation of the PSWAC and NCC recommendations.


# NPSTC: The Collective Voice of Public Safety Communications

Seven years ago, 13 associations put aside individual agendas to unite their voices in support of vitally important issues that affect public safety telecommunications. The National Public Safety Telecommunications Council (NPSTC) was originally organized to encourage and facilitate implementation of the findings and recommendations of the Public Safety Wireless Advisory Committee (PSWAC), established in 1994 by the Federal Communications Commission (FCC) and National Telecommunications and Information Administration (NTIA) to evaluate the wireless communications needs of local, tribal, state, and federal public safety agencies through the year 2010, identify problems, and recommend possible solutions.

Today NPSTC provides a collective voice for a broad range of public safety organizations on public safety communications issues that are important to every U.S. citizen. "For the first time in my 30 years of public safety communications experience, all of the associations are working together within NPSTC, with one voice, to bring about change," says Douglas M. Aiken, NPSTC Vice Chair, representing the International Municipal Signal Association (IMSA).

## Why is there a need for NPSTC?

There are approximately 2.5 million public safety first responders in the United States working for 18,000 local and state law enforcement agencies, 26,000 fire departments, and more than 6,000 rescue departments, plus federal law enforcement, tribal law enforcement, and other agencies, such as transportation and the public utilities who need to talk to one another during critical incidents. PSWAC was chartered as a result of significant pressure put on Congress by a number of public safety associations that sought much-needed spectrum relief for public safety communications and new technologies integration. PSWAC members represented a broad range of public safety agencies from local, state, and federal jurisdictions; public service providers; equipment manufacturers; commercial service providers, and the public at large. In 1996, the Advisory Committee released the *PSWAC Final Report,* which identified public safety issues and concerns. Most of the PSWAC findings and recommendations are considered valid today.

Five years later in 1999, the FCC sponsored the National Coordination Committee (NCC) to provide the Commission with similar recommendations concerning interoperability, technology, and implementation — this time, regarding the 24 MHz of spectrum in the 700 MHz band reallocated by the FCC from broadcast television to public safety. As with the formation of PSWAC, the FCC realized the importance of directly involv-

ing local and state public safety leaders in developing these important decisions. When the NCC ended its work in July 2003 with a number of decisions still outstanding, NPSTC agreed to expand its original role to include NCC follow-on activities. "Beyond the many recommendations and reports developed by these two federal committees," says Harlin McEwen NPSTC Vice Chair, representing the International Association of Chiefs of Police (IACP) and other public safety associations, "their most important benefit to the public safety community was to provide a public stage for discussion of relevant public safety wireless telecommunications issues."

NPSTC emerged from the work of these two earlier advisory committees and continues to provide that important public stage for critical public safety telecommunications. Marilyn Ward, NPSTC Chair, and one of the original PSWAC members who urged the public safety community to continue that group's important work, says, "PSWAC was the first time all levels and disciplines within the public safety community worked hand in hand to identify our long-term needs. After spending that period together, we discovered how critical it is to develop consensus and work together as we communicate our needs to the regulatory bodies that control public safety spectrum. The NCC process further solidified our community." Today NPSTC's work has grown to encompass a wide range of public safety telecommunications issues that is likely to continue to expand.

## What does NPSTC do for public safety?

NPSTC develops and makes recommendations to appropriate governmental bodies regarding public safety communications issues and policies that promote greater interoperability and cooperation between local, tribal, state, and federal agencies. The Council serves as a standing forum for the exchange of ideas and information, and works to identify and promote methods for funding development of public safety communications systems. Additionally, NPSTC monitors new technology research, supports studies of public safety communications, and uses research to stay abreast of user needs. Currently NPSTC is working on policies and issues surrounding the following important public safety wireless communications areas:

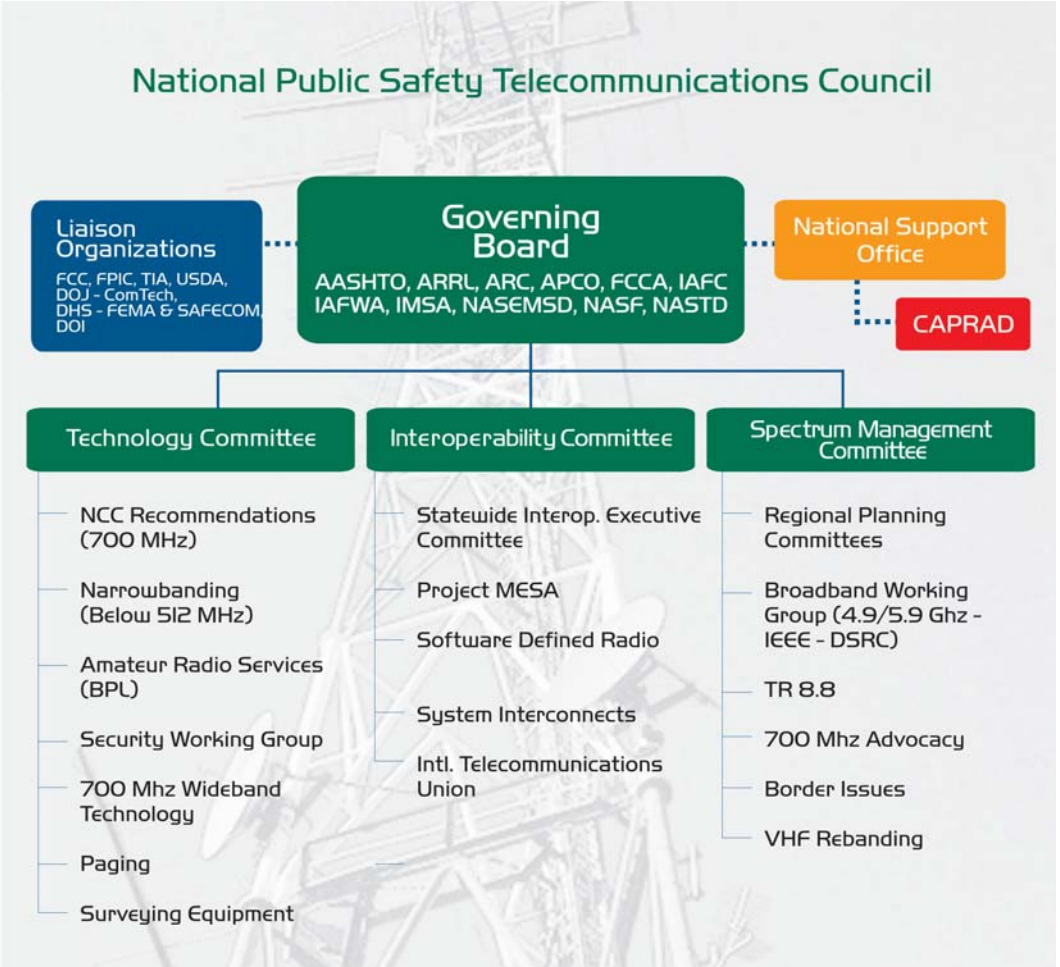
- 4.9 GHz
- Effective spectrum management and deployment
- Software Defined Radio (SDR) and Cognitive Radio (CR) technologies
- Narrowband technology transition
- VHF spectrum reconfiguration
- US/Canadian/Digital Television (DTV) Transition for the 700 MHz band
- Project MESA, IEEE 802, DSRC, and TIA standards development or digital mobile broadband technologies
- Securing additional spectrum resources
- 800 MHz interference resolution and band reconfiguration
- Statewide Interoperability Executive Committees (SIECs)
- 700 and 800 MHz Regional Planning Committees (RPC)
- Broadband over Power Lines (BPL) interference
- International Telecommunications Union activities (ITU)

## How is NPSTC organized?

NPSTC's Governing Board is made up of representatives from each of its member organizations. The Executive Committee comprises a Chair, two Vice Chairs, and the three Committee Chairs. NPSTC currently has three Committees: Technology, Spectrum Management, and Interoperability. A National Support Office (NSO) provides administrative and technical support to the Governing Board and Committees, including meetings, documentation, reporting, the website, listserv, and archives, and the publication of

the newsletter and quarterly and annual reports.

A Chair and Vice Chair are appointed by the Governing Board to preside over each Committee and each Working Group. The officers must be employees of a public safety or public service organization as defined in the *PSWAC Final Report* or a recognized organization that represents these entities. The Committees, generally through their Working Groups, are responsible for conducting research, writing position papers, and giving presentations at various meetings and conferences at the request of the Governing Board. "The Working Groups meet on the first day of our 2-day quarterly meetings," says Ward, "and do a great deal of the work that is brought to the Governing Board. As in the NCC process, the Working Groups are where presentations are made and discussed. We also interact extensively via conference calls, listservs and emails, but the face-to-face meetings are critical to achieve agreement of the entire group." The Working Groups interact with one another and the associations to provide details of research, by reaching out to subject matter experts and developing positions for the Committee Chairs, who in turn forward those positions with their comments to the Governing Board for approval. "In the past, NPSTC assigned task forces to study topics and make recommendations; however, as we have grown," Ward says, "we created the Committee and Working Group structure to ensure oversight of all of the activities we are involved in or monitoring."




In June 2004, the Telecommunications Industry Association (TIA) was added to the NPSTC Governing Board as a non—voting member. In addition to approving NPSTC's revised organizational chart, two new Working Groups were added and approved-700 MHz Wideband Technology became part of the Technology Committee and Border Issues was added to the Interoperability Committee in June. At the September 2004 meeting, held in Baltimore, Maryland, the Governing Board added the VHF Rebanding Working Group to address the development of a new VHF band plan. The International Telecommunications Union (ITU) Working

Group was moved from the Spectrum Management Committee to the Interoperability Committee during the quarter as well. At the quarterly meeting in New York City, held prior to the annual Radio Club of America dinner, the Governing Board approved the addition of two new Working Groups — the Paging Technologies Working Group and the Surveying Equipment Working Group — to the Technology Committee. NPSTC continues to expand as the community finds the need for input and study of topics impacting public safety communications.

Committee Chairs are responsible for FCC filings on issues pertaining to their Committees once the item as been approved by the Governing Board. Committee Chairs are a part of the Executive Committee and involved in ongoing decisionmaking when the Governing Board is not in session.

For more information on public safety telecommunications issues or to participate in NPSTC, visit the website at *www.npstc.org*. The site provides access to NPSTC's newsletter, ***spectrum***, the CAPRAD database, FCC filings, reports, and publications, and links to other public safety sites.

Pictured are (from left) front row: Harlin McEwen, IACP; Wanda McCarley, APCO; Marilyn Ward, NPSTC Chair; Douglas Aiken, IMSA. Back Row: Richard Reynolds, NASTD; Vincent Stile, APCO; Larry Miller, AASHTO; Wayne Leland, TIA; Ralph Haller, FCCA, IAFWA, NASF; and John Powell, IACP.

# Meet the Executive Committee

## Marilyn Ward, Chair


Marilyn Ward

Ms. Ward brings 33 years of experience as both an advocate for public safety telecommunications issues and as an administrator in public safety telecommunications, from her position as Manager of Communications for the City of Orlando (Florida) and part-time police officer in her early days in public safety, to her current role as Orange County (Florida) Public Safety Communications Manager. Ms. Ward served as the Association of Public Safety Communications Officials - International (APCO) Task Force Leader on the Public Safety Wireless Advisory Committee (PSWAC) and was instrumental in creating NPSTC, the follow-on effort to provide a unified voice for public safety telecommunications needs. She is a Fellow in the Radio Club of America, was a steering committee member of the National Coordination Committee (NCC), former president of APCO, and NPSTC Founding Chair.

Appointed as the Orange County, Florida, Communications Manager in September 1999, Ms. Ward manages 9-1-1, Radio Services, and Government Information. She is the project manager for the 3-1-1 Project and is the Chair of the Governor's Statewide Regional Domestic Security Task Force Interoperability Committee. As Communications Manager, Ms. Ward has been able to stay involved with communications issues on every level - local, state, and federal. Ms. Ward holds a degree in Business and Management and has received many public safety-related certificates in her career.

## Douglas M. Aiken, Vice Chair

Chief Aiken brings 29 years of experience as both an advocate for public safety telecommunications issues and as an administrator in public safety telecommunications, from his service with the Manchester (New Hampshire) Fire Department to his current role as Chief of Lakes Region Mutual Fire Aid. Chief Aiken served on PSWAC, was a member of the steering committee of the NCC, and was instrumental in creating NPSTC, the follow-on effort to provide a unified voice for public safety telecommunications needs.


Douglas M. Aiken

In his position as Chief of Lakes Region Mutual Fire Aid, a 37-community Fire, EMS, and HazMat agency covering over 1,500 square miles of central New Hampshire, he is responsible for the coordination of 37 fire and EMS agencies, the Central New Hampshire HazMat Team, and the operation of the central communications center. In addition, he serves as the chairman of the New Hampshire Enhanced 9-1-1 Commission. A member of the New Hampshire Air National Guard since 1969, he currently serves as a Colonel with the Joint Forces Headquarters - New Hampshire.

Chief Aiken is a former chairman of the board and current chair of the radio committee of the International Municipal Signal Association (IMSA), past president of the Land Mobile Communications Council (LMCC), current chair of the International Association of Fire Chief's (IAFC) Communications Committee, a member of the National Advisory Committee of the Congressional Fire Service Institute, and a Fellow of the Radio Club of America.

Chief Aiken began his public safety career as the Superintendent of Fire Alarm for the Manchester Fire Department in 1976. He became Chief of the

Communications Division in 1988 and assumed his current position in 1997. He has published numerous articles and is the author of the IMSA Public Safety Dispatcher Certification program. Chief Aiken holds a Bachelors Degree in Management from New Hampshire College, an associate degree in Electronic Engineering from Wentworth Institute of Technology, and is a graduate of the Air University Air Command and Staff College and the Air War College.

## Harlin McEwen, Vice Chair

Chief McEwen brings 47 years of experience as both an advocate for public safety telecommunications issues and as a career law enforcement officer and administrator. Chief McEwen participated in PSWAC, was a member of the Steering Committee of the NCC, and was a leader in creating the NPSTC, the follow-on effort to provide a unified voice for public safety telecommunications needs.

Harlin McEwen

Chief McEwen started his career as a Patrol Officer in 1957 in his home town of Waverly, New York (NY), then served in the Tioga County, NY, Sheriff's Department and the Cayuga Heights, NY, Police Department as a Patrol Officer and Investigator through 1967 when he was promoted to Sergeant. In 1972, he was promoted to Chief of Police, a position he held for 13 years. From 1969 through 1974, he served as Coordinator of the Tompkins County Mobile Radio District and supervised the installation of a new county-wide law enforcement radio communications system. From 1985 until 1988, Chief McEwen served as Deputy Commissioner of the New York State Division of Criminal Justice Services and Director of the Bureau for Municipal Police, where he was responsible for overseeing the training and registration of all police officers and peace officers in New York State, as well as for the development and implementation of the New York State Law Enforcement Agency Accreditation Program. From October 1988 through February 1996, he served as Chief of Police for the City of Ithaca, NY, where he was instrumental in implementing modern technology and computerization and advancing training and professionalism of the force.

In February 1996, Chief McEwen was sworn in by Federal Bureau of Investigation (FBI) Director Louis J. Freeh as a Deputy Assistant Director. During his tenure at the FBI, he traveled extensively throughout the United States and internationally meeting with law enforcement groups and speaking at international, national, and regional law enforcement and criminal justice conferences on matters relative to the FBI Criminal Justice Information Services. In April 2000, he retired from the FBI and active law enforcement service and was presented the prestigious FBI Medal of Meritorious Achievement. On November 14, 2000, the International Association of Chiefs of Police (IACP) honored Chief McEwen by presenting him with the first IACP Lone Star Distinguished Award in recognition of his exemplary service to the IACP for over 22 years as Chairman of the IACP Communications & Technology Committee. He continues to serve as Chairman of the IACP Communications Committee and also serves as Communications Advisor to the Major Cities Police Chiefs Association, the National Sheriffs' Association, the Major County Sheriffs' Association, and as an advisor to the FBI, the National Institute of Justice, the Department of Homeland Security, and various other local, state, and federal agencies.




# Technology Committee

*Chair, Glen Nash, Vice Chair, Sean O'Hara*

I am pleased to introduce you to the Technology Committee's efforts, and the goals we are working toward to enhance communications capabilities for operations that support the protection of life and property, and the 'quality of life.' I would also like to extend my thanks to the Committee and Working Group leaders and participants within this Committee and its Working Groups for without their efforts and sacrifices, nothing could have been accomplished in 2004. Through their efforts, we have accomplished a great deal together.

The NPSTC Technology Committee was formed to ensure that the public safety and public service communities maximize their communications capabilities by facilitating the best possible utilization of current and future technologies. The Committee helps these communities to maintain a high degree of awareness of technological development, deployment, standardization, and regulation. The Technology Committee also works hand in hand with the Interoperability and Spectrum Management Committees to successfully achieve the mutual goals of all three Committees.

### Some of our immediate goals within the NPSTC Technology Committee include the following.

- Promoting the recommendations of the NCC and ensuring that such recommendations become enacted within FCC Rules.
- Working with both industry and public safety/public service to set proper guidelines and timelines for narrowband and narrowband-equivalent technology transitions at frequency bands below 512 MHz, as well as ensuring that FCC Rules properly reflect these conclusions.
- Continuing our liaison with the Amateur Radio Services in order to advance our mutual goals in support of Public Protection and Disaster Relief (PPDF) operations.
- Closely scrutinizing the deployment of Broadband over Powerline (BPL) technologies and reacting swiftly and surely to protect public safety and public service operations in any affected frequency bands.
- Helping the public safety community define their communications security requirements and addressing the development and utilization of security services for advanced technologies and broadband communications deployments.
- Assessing the capabilities of wideband technologies below 1 GHz (e.g., Scalable Adaptive Modulation or SAM) and developing guidelines for successful deployments of these technologies as well as working with interested Regional Planning Committees (RPCs) to optimize initial deployments of these technologies over entire regions.
- Working to ensure that paging capabilities can be effectively supported within public safety communications technologies, maintaining a watch on paging technologies and product obsolescence, and identifying appropriate spectrum resources for operation of public

safety-owned paging systems.

- Identifying appropriate spectrum resources for operation of public safety or public service surveying and geolocation systems.
- Working with the Spectrum Management Committee to maximize communications capabilities through the use of broadband technologies.
- Working with the Interoperability Committee to maximize communications capabilities through the use of Software Defined Radio (SDR) and Cognitive Radio (CR) technologies.
- Working with both the Spectrum Management Committee and the Interoperability Committee to review the need to update the PSWAC Report.
- Working with both the Spectrum Management Committee and the Interoperability Committee to assess more detailed performance metrics for inclusion into an updated version of the SAFECOM *Statement of Requirements.*

In 2004, we have initiated or assisted with NPSTC-filed FCC comments on the Broadband over Powerline (ET 04-37), 4.9 GHz (WTB 00-32), and 700 MHz (WTB 96-86) Dockets. We expect to continue to be very active on many other FCC proceedings in 2005, including those dealing with broadband technologies, Narrowbanding below 512 MHz, deployment and regulation of Broadband over Powerline Technologies, Software Defined and Cognitive Radio technologies and security issues, and other areas under the purview of this Committee.

## Technology Committee Members

### Glen Nash, Chair


Glen Nash

Glen Nash is a Senior Telecommunications Engineer with the state of California, Department of General Services, Telecommunications Division. He served as the Chair of the Technology Subcommittee of the National Coordination Committee from 1999-2003. Glen also served on the National Task Force for Interoperability, the National Public Safety Planning Advisory Committee, NPSTC, Project 25, Project MESA, the 800 MHz Regional Planning Committees for Regions 5 and 6, and the Emergency Broadcast System Advisory Committee. He is a Fellow in the Radio Club of America and a Senior Member of the Institute of Electrical and Electronic Engineers.

Mr. Nash has over 32 years experience in the design, installation, and maintenance of land mobile radio and fixed microwave communications systems used by state agencies. For the past 20 years, he has been responsible for management of the state's spectrum resources, frequency coordination, and station licensing and he has represented the state on regulatory matters related to radio spectrum. Mr. Nash is a Past-President of APCO, a 16,000-member professional association of governmental employees working in the field of public safety communications. During his term as President, he represented the public safety community nationwide on matters before the Federal Communications Commission and the Congress related to spectrum utilization, frequency coordination, and interoperability. Mr. Nash graduated from the University of California at Davis with a Bachelors of Science in Electrical Engineering and holds a Masters in Public Administration from Golden Gate University.

### Sean O'Hara, Vice Chair

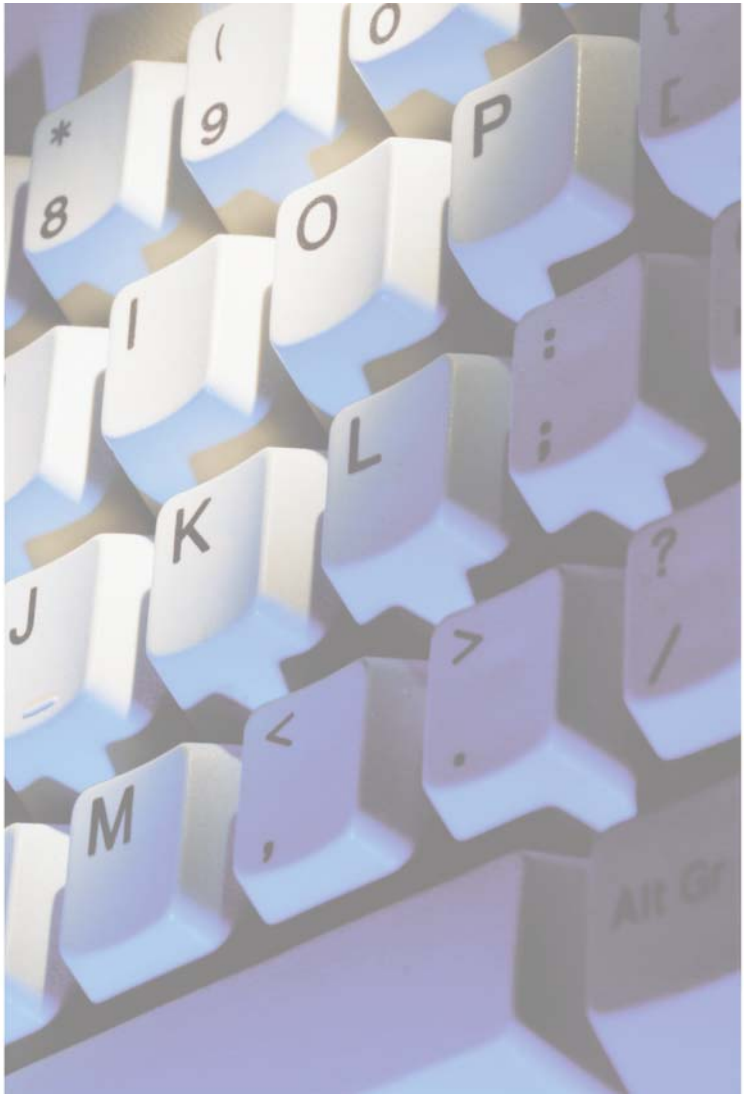

Sean O'Hara

Sean O'Hara has been deeply involved with public safety communications for over 8 years, and serves as a Lead Communications Engineer for New York's Statewide Wireless Network. He works actively with both the FCC and international regulatory bodies, and works within

numerous standards development organizations such as IEEE 802.11 802.16, 802.18, 802.22, DSRC/IEEE-WAVE, the Software Defined Radio Forum, and the Telecommunication Industry Association TR-8 Committees.

He serves as Vice Chair of the NPSTC Technology Committee, Co-Chair of NPSTC's Broadband and Border Issues Working Groups, Co-Chair of the Software Defined Radio Forum's Cognitive Radio Technologies Working Group, and is a member of the APCO Spectrum Management Committee. Mr. O'Hara led the development of the national 700 MHz allotments for NPSTC. These allotments were created using complex models that characterized geographic capacity requirements and integrated detailed terrain shadowing and diffractive effects. The entire allotment set was optimized on a national scale, and represented the largest U.S. public safety spectrum management and frequency assignment effort ever undertaken.

Mr. O'Hara is the Business Area Manager for Analysis, Communications, and Collection Systems programs at Syracuse Research Corporation (SRC). SRC is a not-for-profit government consulting and research and development corporation that protects the interests of its government and public safety customers over a broad range of technical matters. Mr. O'Hara holds a Bachelor of Science Electrical Engineering (BSEE) degree from Syracuse University, with a Master of Science Electrical Engineering (MSEE) pending thesis defense, and has published several papers on spectrum management, software defined radio, and Orthogonal Frequency Division Multiplexing (OFDM)/multi-carrier communications techniques.




## Spectrum Management Committee

*Chair, Steve Devine, Vice Chair, Stu Overby*

Welcome to the Spectrum Management Committee. Within NPSTC, the Spectrum Management Committee focuses on regulatory and technical issues regarding the availability, effectiveness, and usability of public safety spectrum on a nationwide basis. The Spectrum Management Committee works, in conjunction with the NPSTC Governing Board, to provide NPSTC's perspective on outstanding public safety issues to the FCC. The Spectrum Management Committee has five Working Groups, which individually address issues impacting the management of spectrum within public safety.

⊙The Regional Planning Committee (RPC) Working Group works with regional planning representatives from different regions across the country to identify and improve issues that affect the FCC-designated RPCs. Outstanding issues affecting 800 MHz, including the 800 MHz rebanding per FCC Order 02-55, 700 MHz, and 4.9 GHz are subjects critical to the regional planning community across the nation and this Working Group highlights those issues and makes them available, through NPSTC, to the larger public safety communications community.

⊙The Broadband Working Group works within NPSTC to address broadband opportunities within the public safety community. The Working Group provides NPSTC with information on public safety broadband data opportunities and technologies within FCC-assigned public safety spectrum and information on existing commercial broadband data products. The group also works closely with the Telecommunications Industry Association (TIA) TR8.8 Working Group identified to work on the development of appropriate standards for public safety broadband.

⊙The TIA TR8.8 Working Group works within TIA to identify broadband public safety standards. TR 8.8 works in conjunction with the NPSTC Broadband Working Group to clarify the needs of the public safety broadband users and will work with NPSTC to analyze findings and identify conclusions reached in several broadband public safety testbed initiatives underway across the U.S.

⊙The 700 MHz Advocacy Working Group works on outstanding issues resulting from the FCC's 700 MHz proceeding (Docket 96-86) and makes recommendations to the NPSTC Governing Board on 700 MHz issues that are critical to the first responder community and still unresolved within the FCC. This group also drafts comments for NPSTC to file with the FCC on outstanding 700 MHz issues, within the currently allocated 24 MHz and beyond.

⊙The Border Issues Working Group addresses issues that affect border states in the initial implementation of 700 MHz and continued development of 800 MHz. This group will be a valuable resource to the 800 MHz rebanding initiative, as it consists of subject matter experts familiar with spectrum allocations along both of the U.S. international borders and with the recent history of the allocations along border areas.

⊙The VHF Rebanding addresses VHF [Very High Frequency] public safety spectrum and addresses ways in which it could be better utilized. The State of Utah has identified a plan that enables more efficient use of the band by developing structure and order within the

VHF band. This is a critical NPSTC Working Group because the majority of the public safety agencies across the country currently utilize the VHF high band portion of the spectrum (150 MHz) and the ad hoc coordination of VHF high band channels over decades has led to ineffective use of the band due to the lack of channel standardization and uniformity.

⊙The SIEC Development develops strategies that will initiate and maintain an interoperable dialogue between Statewide Interoperability Executive Committees (SIEC) and national planners seeking to identify and address national interoperability issues.

## Spectrum Management Committee Members

### Steve Devine, Chair

Stephen Devine is the Patrol Frequency Coordinator for the Missouri State Highway Patrol in Jefferson City, Missouri. He has been employed in the Patrol's Communications Division in operational police dispatch and technical assignments for 20 years, which has provided insight in his role as coordinator of public safety frequencies as the APCO Automated Frequency Coordination Local Advisor for Missouri. Mr. Devine also serves as the Chairperson of the APCO Automated Frequency Coordination (AFC) Advisory Committee, an advisory group created to oversee the APCO Automated Frequency Coordination subsidiary that is authorized by the FCC to coordinate public safety frequencies.


Steve Devine

Mr. Devine's current duties include managing FCC regulatory responsibilities for the Patrol as well as being an advocate for public safety communications users in Missouri. He also chairs the Region 24 (State of Missouri) 700 and 800 MHz Regional Planning Committees and has overseen the submission of the Region 24 700 MHz plan to the FCC in September 2004. In addition, Mr. Devine serves on NPSTC where he also chairs the 4.9 GHz Working Group, which is working to represent the public safety user community's broadband needs utilizing recently allocated 4.9 GHz radio spectrum. He serves on numerous public safety spectrum management committees on both the local and national level.

### Stuart Overby, Vice Chair

Stuart Overby has over 30 years of experience in spectrum management and communications. Since joining Motorola in 1986, he has taken a leadership role in spectrum allocations for public safety and private mobile radio systems, personal communications services, digital television, and unlicensed consumer systems. He is the Director of Global Spectrum, Standards and Technology Asset Strategy at Motorola, Inc. He currently heads a team whose primary focus is advancing spectrum availability and appropriate standards for public safety and private mobile radio entities to enable deployment of new technologies that meet customer needs. Mr. Overby is active in industry associations and is a member of the Communications Committee of the IACP.


Stuart Overby

Prior to joining Motorola, Mr. Overby was employed by the FCC for 12 years, where his career spanned areas of mobile spectrum and regulatory policy, field enforcement, and broadcast licensing. Mr. Overby has also helped design and deliver spectrum and regulatory management training programs conducted in Asia, Eastern Europe, Latin America, North America, and South Africa. Mr. Overby holds a Bachelor of Science in Electrical Engineering from the University of Virginia. He and his family reside in the Chicago, Illinois, area.


## Interoperability Committee

*Chair, John Powell*

*Vice Chairs, Dave Buchanan and Ralph Haller*

As Chair of the NPSTC Interoperability Committee, I would like to introduce you to our goals and objectives and our efforts to enhance communications capabilities in support of protecting the lives and property of our citizens. The members of this Committee and its various Working Groups are the heart of our successes during the year. I would like to extend my thanks to the Committee and Working Group Leaders and participants within this Committee and its Working Groups, for without their efforts and sacrifices, nothing could have been accomplished in 2004. Through their efforts, we have accomplished a great deal together. The NPSTC Interoperability Committee was formed to ensure that the public safety and public service communities maximize their interoperability effectiveness by promoting the concepts of governance, standard operating procedures, technology, training/exercises, and usage described in the SAFECOM Interoperability Continuum. The Interoperability Committee works with the Technology and Spectrum Management Committees to successfully achieve the mutual goals of all three Committees.

The goals of the NPSTC Interoperability Committee include the following.

- Promoting the recommendations of the 700 MHZ National Coordination Committee (NCC) and ensuring that such recommendations become enacted within FCC Rules, or through other mechanisms, such as Department of Homeland Security (DHS) and Department of Justice (DOJ) Grant Guidance.
- Promoting Statewide Interoperability Executive Committee (SIEC) activities through its SIEC Working Group.
- Promoting international broadband standards through participation in Project MESA, an international partnership producing globally applicable technical specifications for digital mobile broadband technology aimed initially at the sectors of public safety and disaster response.
- Monitoring and participating, as appropriate, in international regulatory activities of the International Telecommunications Union (ITU), through its ITU Working Group.
- Providing guidance to the public safety community on system interconnects through its System Interconnect Working Group.
- Maximizing communications capabilities, and particularly interoperability, through the use of Software Defined Radio (SDR) and Cognitive Radio (CR) technologies.
- Participating in numerous standards development and activities/organizations related SDR, including the IEEE, the Internet Engineering Task force (IETF), and SDR Forum.
- Working with the Technology and Spectrum Management Committees to review and update the *PSWAC Final Report.*
- Working with both the Spectrum Management and Technology Committees to provide NPSTC and practitioner input to an updated version of the SAFECOM *Statement of Requirements.*
- Monitoring activities at the local, state, and federal

level that promote interoperability, including federal grant activities at DOJs Office of Community Oriented Policing Services (COPS) and DHS's Office for Domestic Preparedness (ODP).

In 2004, the Interoperability Subcommittee initiated or assisted with several NPSTC-filed FCC comments, including 4.9 GHz (WTB 00-32), 700 MHz (WTC 96-86), and the SDR/CR Dockets. Our members also provided engineering and practitioner input to the DOJ's' GLOBAL Wireless Security Working Group.

## Interoperability Committee Members

### John Powell, Chair


John Powell

John Powell has over 25 years of law enforcement experience at both the municipal and state levels as a police officer and supervisor for two San Francisco area agencies. During his career, Mr. Powell implemented and/or managed several major projects including a statewide trunked radio system and an E-911 Computer Aided Dispatch center for the University of California. He has served on numerous local, state, and national committees, including the California Law Enforcement Mutual Aid Radio System Executive Committee, the California Legislature's Joint Committee on Fire, Police, Emergency and Disaster Services, PSWAC, and as chair of the Interoperability Subcommittee of the NCC.

Since leaving the University of California in 2002, Mr. Powell, a senior consulting engineer, has consulted extensively on issues and projects related to advanced telecommunications technologies, including interoperability and software defined radio, for DHS, DOJ, and the Executive Office of the President of the United States. He currently chairs California's SIEC and Software Defined Radio Working Group within NPSTC. He is the government representative to the Board of Directors at the Software Defined Radio Forum, a member of the Executive Committee of DHS's Project SAFECOM, and the Project 25 Steering Committee. Professional associations include membership on IACP's Law Enforcement Information Management Section and the Communications and Technology Committee where he serves as an IACP representative to NPSTC. He is a life member and International Past President of APCO, a Fellow of the Radio Club of America, and a member of IEEE.

Mr. Powell holds a Bachelor's Degree in Electrical Engineering from the University of California at Berkeley and received the Chancellor's Distinguished Service Award from that institution at the end of his law enforcement career. He is one of four recipients of APCO's Art McDole Award for long-term technical contributions to the art and practice of public safety telecommunications and was named "Most Influential Person in Public Safety Spectrum Management" by *Radio Resource* magazine in 1998. Mr. Powell has authored numerous articles for communications sector publications on operational and technical issues related to advanced wireless communications, interoperability, and software defined radio.

### David Buchanan, Vice Chair


David Buchanan

David Buchanan is a Network Services Supervisor for the County of San Bernardino, California. He is a life member of APCO and is Chairman of APCO's Spectrum Management Committee. He also serves as the Southern California Local Frequency Advisor for APCO. Mr. Buchanan is the Chairperson of the Southern California Region 5, 700 MHz Planning Committee. Mr. Buchanan served as President of the California Public-Safety Radio Association for 2002

In his role as Network Services Supervisor, Mr. Buchanan is responsible for management and future upgrades of an 800 MHz integrated trunked/conventional radio system. This system supports over 15,000 units, serving 150 different agencies and departments in the 20,000 square mile county.

## Ralph Haller, Vice Chair


Ralph Haller

Ralph Haller brings 40 years of experience in the communications industry, 25 with the FCC. Mr. Haller was chief of the FCC's Private Radio Bureau for several years and was the approving official for the original 55 National Public Safety Planning Advisory Committee (NPSPAC) Regional Plans. He wrote the charter for the more recent PSWAC and initiated the meetings. Mr. Haller's areas of expertise include broadcasting, cable television, human radio frequency exposure, and land mobile communications systems. Mr. Haller is an electronics engineer and currently, in addition to working with the Forestry Conservations Communications Association (FCCA), is a land mobile consultant with Fox Ridge Communications, Inc.

Mr. Haller is a fellow in the Radio Club of America and a member of the Institute of Electrical and Electronics Engineers (IEEE). He is also a member of the Board of Directors of the American Mobile Telecommunications Association. As Executive Manager, FCCA, Mr. Haller is in charge of the day-to-day operations and regularly represents the FCCA at various meetings and forums. Mr. Haller is also president of Fox Ridge Communications, Inc., Gettysburg, Pennsylvania, a land mobile consulting firm.

Mr. Haller began his work life as an engineer/disc jockey while still in high school and worked his way through college as a broadcaster. After graduation, he worked as a broadcast engineering consultant before joining the FCC in 1971. Mr. Haller held numerous positions with the FCC, including field inspector in Los Angeles, California; chief of the FCC's monitoring network; chief of research at the FCC laboratory; chief engineer of the FCC's Mass Media Bureau; and, finally, as chief of the Private Radio Bureau. In 1996, Haller left the FCC to form a land mobile consulting company. He is a regular speaker at industry functions and regularly writes articles for *Mission Critical* magazine. Mr. Haller is also an authority on the FCC's rules relating to human exposure to radio frequency energy and has written software to evaluate compliance of radio sites. Mr. Haller holds a Bachelor of Science degree in Electrical Engineering from the University of Kansas.

National Public Safety Telecommunications Council - NPSTC
The Collective Voice of Public Safety Telecommunications