National Public Safety Telecommunications Council Second Quarter Report, 2006

This Quarterly Report documents the activities of the National Public Safety Telecommunications Council (NPSTC), its Governing Board, Committees, and Working Groups for the Second Quarter, 2006.

Governing Board

During the Second Quarter, 2006, the NPSTC Governing Board held a quarterly meeting on June 12-14, 2006, in Ontario, California. The Governing Board reviewed and approved a number of changes, appointments, and activities of the four Committees and their Working Groups, detailed below in the individual Committee reports. The Governing Board approved filings and correspondence with the Federal Communications Commission (FCC), detailed below in FCC filings.

During the Second Quarter, the NPSTC Governing Board selected the first recipient of the Richard DeMello Award, presented to one public safety communications person who has demonstrated the highest levels of personal and professional conduct and performance in the local, state, and national public safety communications arena. The award will be presented at the Annual Awards Dinner of the Radio Club of America (RCA) on November 17, 2006. There are three co-sponsors for the RCA DeMello Award—telecommunications companies Raytheon, Motorola, and M/A-COM.

At the June Governing Board meeting, the following items were approved.

- The National Capital Region (NCR) Spectrum Coalition for Public Safety recommended that public safety adopt 1xEVDO Rev A as the broadband public safety standard in 700 MHz and that NPSTC manages the standardization process. The Governing Board approved an action to further research the NCR's proposal and confirm other vendor data.

- The Governing Board approved the Interoperability Committee's new Broadband Interoperability Working Group.

- The Governing Board approved the request of the Regional Planning Committee (RPC) Committee to formally create the National Planning Oversight Committee (NPOC) and place it under the guidance of the RPC Committee with a "dotted line" connecting responsibilities to the Interoperability Committee.

- The Governing Board approved the Technology Committee's request to approve a letter from NPSTC requesting that Project 25 include an alerting function as an optional feature of P25 subscriber units.

- The Governing Board approved the Technology Committee's request to draft a Petition for Rulemaking (PFR) asking the FCC for permission for public safety to use business/industrial spectrum for land survey purposes.

- The SAFECOM Program has released Version 2 of the Statement of Requirements (SoR) and has asked NPSTC to participate in the vetting process of that document. Because SAFECOM is operating on a short timeframe and would like a 30-day response, the Technology Committee created a task group meet at ITS in Boulder during mid-July to receive a presentation from the engineering staff on the SoR, and make comments at that time. The Governing Board approved the Technology Committee's request that the task group's comments on the SoR would be on behalf of the Governing Board, and also approved travel for the task group.

The following presentations were made at the Governing Board and Committee meetings at the June meeting.

- Chip Hines, Acting Director, Office of Interoperability and Compatibility (OIC), Department of Homeland Security (DHS), briefed the Governing Board on DHS's Disaster Management (DM) program, which falls within the Communications Division of OIC.

- Bob Ryder, SPAWAR, Technology Tools Management, and Bob Drew, Software Management, provided an overview and a detailed demonstration of the capabilities of the software tool, Communications Assets Survey and Mapping (CASM). The tool was created to support asset mapping for DHS's Interoperable Communications Technical Assistance Program (ICTAP).

- John Logan, Support Office (SO), and Sean O'Hara, SO, provided a regulatory and technical review of converging 700 MHz issues.

FCC Filings and Regulatory Issues

At the June Governing Board meeting, the following issues were reviewed for further action.

- 700 MHz: NPSTC developed reply comments to the WT Docket 96-86 NPRM. The updated comments were approved by the Governing Board for FCC filing by July 6.

- Border Issues: NPSTC hosted a good discussion on Canadian border issues regarding the importance of local and state detailed input to the FCC on their challenges along the border.

- Federal Aviation Administration (FAA): NPSTC will review an FAA proposal to amend the current rules regarding notification requirements and obstruction standards to more closely align standards with FAA airport design and instrument approach procedure and bring a summary to the Governing Board for further discussion. If this is approved, it would be very burdensome for public safety, and, in the worst case, every application for a change in license would have to go to both the FCC and the FAA.

- 800 MHz Rebanding WT Docket 02-55: NPSTC wrote a November 18, 2006, letter to Public Safety Chief Michael Wilhelm on the structure and process of distributing general category channels emanating from the cellular portion of rebanding. A follow-up conference call with division leadership is planned.

- The RPC Committee requested assistance from the Transition Administrator (TA) to promote and/or educate users on the benefits of adopting the common nomenclature of the NCC scheme. The Committee will carefully craft a letter that reflects the sensitive nature of the issue.

NPSTC filed the following submissions with the FCC in the Second Quarter of 2006.

- Regarding the 700 MHz band, NPSTC filed comments and additional technical comments in response to the Eighth Notice of Proposed Rulemaking (NPRM). The NPRM seeks to determine whether the Commission should modify the public safety portion of the 700 MHz band to accommodate broadband communications, and, if so, how. *In the Matter of the Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010*, WT Docket 96-86, FCC 06-34 (March 21, 2006). Additional comments addressing the 700 MHz Broadband and Wideband Opportunities (June 6, 2006), filed in WT Docket 96-86.

- A letter was sent to Ambassador David Gross and FCC Chairman Kevin Martin, addressing 800 MHz reconfiguration issues in the border regions (April 3, 2006), filed in WT Docket 02-55.

- Comments addressing *In the Matter of the Wavier Request of Hennepin County, Minnesota to Allow Establishment of a Region Wide Public Safety Communications System in the 700 MHz Band* (June 30, 2006) were filed in response to Public Notice DA 06-1182.

Executive Committee

During the Second Quarter, the Executive Committee (EC) and the Executive Director met in person and via teleconference to discuss NPSTC program planning and future meetings. The EC initiated a monthly teleconference, agreeing to meet on the third Tuesday of the month beginning in July at 4:00 PM EST. In June, the EC held an Executive Committee session and participated in the NPSTC Governing Board quarterly meeting. The EC focused its attentions on the following issues during the Second Quarter:

- 700MHz band plan
- CAPRAD governance and presentations
- Border interference in all bands
- Outreach and NPSTC articles in member publications and other law enforcement publications
- Cyren Call proposal for commercial/public safety nationwide network
- Direction for the RPC to further develop the National Plan Oversight Committee (NPOC) as proposed by the National Coordination Committee (NCC)
- Assistance and Outreach to those RPCs needing help in partnership with the National Institute of Justice (NIJ) and Texas Sheriffs
- Policy for DeMello Award

At the June EC meeting, the EC developed modifications to its presentation process, made plans for the NPSTC Annual Strategic Planning Meeting to be held in Denver in September, assigned panel speakers for a National Association of State Emergency Medical Services Officials (NASEMSO) scheduled for October 5, 2006, in Charleston, West Virginia, and reviewed and requested background information on the National Telecommunications and Information Administration (NTIA) Spectrum Request for Information (RFI).

On April 11, 2006, NPSTC's Vice Chair Chief Harlin McEwen received an award at the APCO International Second Annual Public Safety Communications Leadership in Policy Awards Dinner.

Representatives of NPSTC's Governing Board and/or its Executive Director participated in the following meetings during the Second Quarter:

- NPSTC met with the National Institute of Justice (NIJ) in San Diego, California, on April 30-May 4, 2006, to participate in a program review of CommTech.

- NPSTC met with SAFECOM Program Manager, Tony Frater, in Washington, D.C., in April 6, 2006.

- NPSTC participated in the International Wireless Communications Expo (IWCE) Conference and Regional Planning Committees (RPC) Colloquium, on May 14-19, 2006, Las Vegas, Nevada. This was a very productive opportunity to meet with representatives from public safety telecommunications and other important representatives from the wireless communications community.

  --NPSTC participated in two panels and attended presentations on the Cyren Call proposal, a seminar on in-building communications and one on VHF/UHF rebanding, and participated in the RPC meeting.

  --NPSTC representatives also attended a meeting with NIJ regarding CAPRAD; a meeting with Cyren Call regarding their commercial/public safety network proposal; held two conference calls with the Spectrum Management Committee regarding the NPRM; attended a meeting with the Texas Sheriffs about border issues, and a meeting with the Transition Administrator (TA) about borders. NPSTC also met with a Board member from the Association of Public Safety Communications Officials – International (APCO) about NPSTC and met with Ron Haraseth, APCO, regarding printing NPSTC articles in APCO's magazine. NPSTC representatives also held a meeting with the Radio Club of America (RCA) to complete plans for the DeMello award procedure.

- NPSTC participated in the American Association of State Highway and Transportation Officials (AASHTO) Conference, on May 20-25, 2006, in Windsor, Connecticut.

- NPSTC participated in the Interoperability Summit on May 24-25, 2006, in Austin, Texas, and sponsored by the Office of Community Policing Services (COPS).

The EC assembled and confirmed Outreach Panels for Governing Board and Executive Committee representation at the International Association of Fire Chiefs (IAFC), Forestry Conservation Communications Association (FCCA), International Wireless Communications Expo (IWCE), and Association of Public Safety Communications Officials – International (APCO).   An article on NPSTC was written for APCO's magazine, *Public Safety Communications*, an article on software defined radio with a sidebar on NPSTC was written for *Mission Critical* magazine, and an article on 800 MHz rebanding first published in *npstc spectrum*, will appear in *Law Officer* Magazine, attributed to NPSTC.

During the Second Quarter, the Executive Committee drafted and completed filings and correspondence for the Governing Board's approval and other communications with the FCC, detailed below. The EC reviewed and approved a number of other documents and publications of NPSTC, including NPSTC's Annual Report, the *e-spectrum* and *spectrum* newsletters, Governing Board minutes, correspondence, and website materials. The EC continued its research and discussions on border issues and wideband/broadband configuration of the 700 MHz band.

Committee website membership has steadily grown since the new NPSTC structure has been introduced, more than tripling in size over the last year. There was continued growth since the First Quarter.

Quarter	Interoperability	Spectrum Management	Technology	RPC
Jun-04	29	28	27	
Sep-04	42	38	39	
Dec-04	47	44	42	
Mar-05	61	58	56	
Jun-05	66	61	59	20
Sep-05	72	64	61	28
Dec-05	83	71	68	37
Mar-06	99	81	74	45
Jun-06	105	88	77	58

Spectrum Management Committee

The NPSTC Spectrum Management Committee currently oversees the activities of the following Working Groups: Broadband/Wideband, Border Issues, 700 MHz Outreach, In-Building Coverage, and VHF Spectrum Acquisition Below 512.

New Items for Governing Board Review

During the Second Quarter of 2006, the Spectrum Management Committee submitted no items requiring Governing Board approval.

The Chair reported that the 700 MHz filing was made and that a technical addendum will be presented to the FCC technical staff following the filing date on June 6, 2006. Reply comments will also be filed. The Committee is working to help the RPCs understand the technical nuances of band planning for 700 MHz wideband and broadband.

The Committee will also prepare recommendations in response to the NTIA/FCC RFI on spectrum sharing to be completed by July 1 to meet the response deadline.

The Committee is also formulating questions that need to be asked regarding the nationwide network initiative proposed by Cyren Call. Referred to as the Public Safety Broadband Trust (PSBT), it would establish a public safety broadband trust that would hold the license for a 30 MHz block of cleared spectrum in the upper 700 MHz band. PSBT would negotiate terms for long-term access to the spectrum with private entities that would agree to build and maintain a

nationwide, next generation network for public safety. PSBT would set appropriate rules and technical standards to ensure backward compatibility to existing public safety systems, maximum interoperability, reliability, redundancy, competition, innovation, and choices for public safety. The network would include a satellite-based element to ensure continuous operations when ground-based equipment is knocked out.

Border Issues Working Group

As part of a special meeting of the Border Issues Working Group held at the June Governing Board meeting, NPSTC had a vigorous discussion on Canadian border issues regarding the importance of local and state input to the FCC on their specific challenges. NPSTC has drafted a pending letter to Chairman Martin and Ambassador Gross that will convey NPSTC's position that the Department of State and the FCC should seek local agency input and that they should issue a call for such comments NPSTC's premise is that local and state public safety operations should be supported by modern communications capability. Border regions present particular challenges, where the lack of viable communications in several areas impedes effective operations. NPSTC thinks these challenges should be addressed by affording agencies most affected with the opportunity to provide information and recommendations as part of the State Department and FCC negotiation efforts. Whether negotiations involve the 800 MHz reconfiguration, interference in the VHF/UHF bands, the 700 MHz, 4.9 GHz, and 5.1 GHz bands, or the need for cross border mutual aid channels and the difficulties resulting from present agreements, an ongoing relationship between public safety users and those representing U.S. interests will produce meaningful agreements that advance shared goals.

Also discussed were interference issues on the Mexican border, The 800 MHz rebanding effort has heightened attention on border issues and how the mutual aid channels will be affected, particularly the interoperability impact when one area is in one rebanding wave and another is in a different wave. The Working Group also discussed UHF and VHF interference issues with Mexico, including illegal broadcasts, which usually have the biggest impact on the mutual aid channels.

700 MHz Advocacy Working Group

During the Second Quarter 2006, much of the efforts directed at 700 in 2005 and early 2006, including securing a 2009 date-certain in TV clearing in the 700 MHz band from Congress, have come to fruition. The Working Group earlier placed documents regarding user rights on low power TV on the NPSTC server. Efforts to coordinate with the Society of Broadcast Engineers (SBE) are on hold, but the Working Group will work to reinvigorate that effort in the future. NPSTC filed reply comments supporting the New York State shortspacing waiver to the FCC at the end of the First Quarter, on March 28, 2006.

In Building Working Group

The In-Building Working Group, which is focused on requirements for in-building and in-tunnel communications and interference issues with Bi Directional Amplifiers (BDAs), hosted a conference call in mid-May with a wide representation from public safety that focused on the interference issues. The issues surrounding the legitimate deployment of BDAs revolve around where they are located and deployed and can be solved by education, while the deployment of less legitimate BDAs by uneducated or illegal users is an enforcement issue for the FCC. The In Building Wireless Alliance (IBWA), also working to improve in-building communications for commercial and public safety users, placed their public safety survey on the NPSTC website with Governing Board approval during the last quarter. The IBWA received almost 40 responses to the survey, 70 percent from the fire community. Not surprisingly, increased safety is the perceived benefit of improved in-building communications. Preliminary survey results are on the server, but the survey is still open and public safety users are urged to participate.

At the June Governing Board meeting, the Working Group hosted a presentation from Dekolink Americas, Inc., on best practices for in-building and spot coverage solutions. The Working Group also noted that NPSTC's Governing Board had not formally acted on the petition on BDAs submitted to the FCC by Jack Daniels, Jack Daniels, Inc.,. In November 2005, Mr. Daniels made a presentation to NPSTC on BDAs and interference to public safety, asking that NPSTC support proposed changes to FCC Part 90.219, based on the action initiated by an August 2005 petition from Bird Technologies, owner of TX RX Systems. The Working Group will provide recommendations to the Governing Board on how NPSTC should respond to the BDA petition submitted by Mr. Daniels to the FCC.

VHF Spectrum Acquisition Below 512 MHz Working Group

The VHF Spectrum Acquisition Below 512 MHz Working Group has determined from an analysis of available channels that there are few channels in this spectrum left in the nation. To acquire those few channels would require waivers. The Working Group is in the process of drafting a position paper for the Governing Board that will frame the issues and differentiate the terms, "sharing" versus "reallocation," and develop some strategy choices for NPSTC. The Working Group finds that this is a critically important issue for public safety, quoting APCO statistics on VHF usage that say 75 percent of public safety operations are below 512 and almost 50 percent in high band VHF.

The Working Group will also determine the viability of additional land mobile use in VHF TV spectrum for the NPSTC November meeting.

Broadband Working Group

During the Second Quarter, the Broadband Working Group monitored the results of several broadband testbeds, including the 4.9 GHz testbed examining helicopter transmissions in California and a completed testbed in Colorado. The Parker Fire Department (Colorado) will be presenting the results of the work at a Telecommunications Industry Association (TIA) TR8.18 meeting next week including reports on what a public safety agency can expect at 4.9 GHz in terms of propagation. NCR has also done propagation and loading testing and it was suggested that the NCR and Colorado present their test results at the next NPSTC meeting in November.

The Working Group also monitors the APIC Broadband Task Group, formerly TR8.8. The Task Group has been analyzing pieces of a smaller requirements document for 4.9 GHz created by the P34 user needs committee to understand what requirements are relevant to incident area networking and what requirements may help to differentiate between the air candidate protocols that have been submitted to the Broadband Task Group. The group is generating quantitative and measurable requirements to contrast and compare the protocols.

As noted above, NPSTC's Governing Board has filed comments on 700 broadband spectrum use, has been evaluating other comments, and will file reply comments on those. The Working Group will develop material on the pros and cons of the various proposals and disseminate the information to the field so they can make informed decisions. The Working Group's other focus is educating users on planning for wideband/broadband and the development of associated guidelines.

At the June Governing Board meeting, the Working Group hosted a discussion of the regulatory and technical issues surrounding the FCC's Eighth NPRM on the 96-86 docket on wideband and broadband in the 700 MHz band structure. Several simultaneous proposals under review could affect the 700 MHz band. Thirty-three comments were filed that fell into three categories—the NPSTC proposal to allow for broadband aggregation of wideband 700 MHz channels, the Lucent pleading, and the Access Spectrum proposal. M/A-COM, DataRadio, and Motorola all also filed separate comments.

One of the responses, from Access Spectrum, asks for further investigation of a restructuring of the band in general. The costs of restructuring would include international impacts with Canada and Mexico, impacts on equipment, the national pool and RPC assignments, ongoing operations, and on waivers in New York State and Hennepin County, Minnesota. The benefits include reduced guard band, less potential for interference, reduced planning requirements, additional deployment flexibility, and a significant amount of additional spectrum for public safety. Regarding border issues with Mexico, there is no existing agreement that will be impacted, but with Canada, there are significant agreements. Canada is only clearing 63/68, and if the U.S. narrowband is aggregated onto 64/69, in New York State, for example, the band could be completely blocked for voice operations for 10 more years. The effect on the national pool is not particularly significant at this point and the RPC assignments would be minimally affected, too, but CAPRAD would have to reprogram all the channels. There would be an impact on equipment, with reprogramming possibly costing $60 million; however, most if not all radios are dual band (700/800) radios.

Technology Committee

The NPSTC Technology Committee oversees the activities of the following Working Groups: Amateur Radio Services and Broadband over Power Line Technology, Voice over Internet Protocol, Security, Paging Technologies, Emergency Alert Systems, and Surveying Equipment.

New Items for Governing Board Review

During the Second Quarter of 2006, the Governing Board approved the following items recommended to the Board by the Technology Committee.

- Approve the NPSTC letter requesting that Project 25 include an "alerting" function as an optional feature of P25 subscriber units.

- Approve the draft of a Petition for Rulemaking (PFR) asking the FCC for permission for public safety to use business/industrial spectrum for land survey purposes.

- Approve the recommendations of a task force vetting the SoR Version 2 on behalf of the Governing Board and approve travel for the task group.

Security Working Group

The Security Working Group is monitoring the release of an academic, nonprofit Request for Proposal (RFP) by SAFECOM with security as one of the topics to be investigated.

VoIP Working Group

The VoIP Working Group is monitoring a project of ITS, which is working to develop a P25 ISSI message emulator in partnership with NIST.

Amateur Radio Service (ARS) Working Group

During the Second Quarter, the ARS Working Group made a presentation at the AASHTO conference on Broadband over Power Lines (BPL).

Paging Technologies Working Group

During the Second Quarter, the Paging Technologies Working Group expanded its focus to include alerting technologies in its mission. The Technology Committee Chair prepared a letter requesting that Project 25 include an "alerting" function as an optional feature of Project 25 subscriber units. Public safety entities have utilized their radio systems to perform an "alerting" function as a means of directing individuals and/or groups to respond to emergent situations. While this function most commonly is used in the fire and EMS communities to alert volunteers and stand-by personnel, it also has been used in the law enforcement community and within general government for similar purposes. The continued availability of this function as systems are transitioned to narrowband operation is critical to providing public safety services.

Surveying Equipment Working Group

The Surveying Equipment Working Group has changed direction following the last meeting, from the acquisition of spectrum for government surveyors to allowing government surveying operations to use frequencies in the Industrial/Business Service. NPSTC filed a PFR with the FCC in this regard.

This amendment to the Commission's rules will permit state and local government to use modern survey technology and equipment that is otherwise unavailable. Significant advances in precision, efficiency and in surveying larger and more remote areas have emanated from technology built around the Global Positioning System (GPS). By delivering these

capabilities GPS Real Time Kinematics (RTK) survey systems have emerged as a vital tool for any surveyor. Manufacturers of land surveying equipment design their products to serve the needs of the larger marketplace, private sector surveyors. The systems' radio equipment providing the needed data links transmit on UHF and VHF channels designated as "itinerant" under the Commission's rules in the Industrial/Business Service. The channels are specifically reserved for these types of usage. The challenge for government surveyors is that private sector surveyors are eligible to be licensed on these channels; government agencies are not.

The result is that government agencies with surveying responsibilities cannot use modern technology as the equipment is embedded with radios for which only authorized users in the Industrial/Business Pool are eligible. Without a waiver, government agencies are precluded from being licensed in the Industrial/Business Service. NPSTC recommends that the Commission amend its rules to permit government surveying activities to be authorized to conduct operations on the itinerant channels in the Industrial/Business Service. NPSTC's proposed amendment to the Commission's rules asks that Section 90.35(c)(17) is amended to read: This frequency will be assigned only to stations used in itinerant operations. *A station operated by an entity eligible under Section 90.20 may be assigned a frequency for purposes of carrying out survey operations.*

Emergency Alert Systems Working Group

During the Second Quarter, the Emergency Alert Systems Working Group has monitored the development and discussion in the XML/OASIS common protocols for emergency warning world about the National Oceanic and Atmospheric Administration (NOAA's) new Unified All Hazard Warning program and how its implementation is not matching the common alerting protocol true standards. In the efforts to develop a common alerting system for the nation, NOAA is making a good effort, but there is concern that the standards being adopted don't meet the open standards process. NPSTC will seek the counsel of the International Association of Emergency Managers (IAEM), which is a member of NPSTC.

Interoperability Committee

The NPSTC Interoperability Committee currently oversees the activities of the following Working Groups: Statewide Interoperability Executive Committee, Project MESA, Software Defined Radio, Cognitive Radio, System Interconnect, and International Telecommunications Union.

New Items for Governing Board Review

During the Second Quarter of 2006, the Governing Board approved the following item recommended to the Board by the Interoperability Committee.

- Approve the new Broadband Interoperability Working Group.

SIEC Working Group

The SIEC Working Group has developed a paper to conceptualize the discussion of a common nomenclature based on the NCC recommendations for interoperability channels and extending it to statewide or regional concept, using the Federal Emergency Management Administration (FEMA's) regional structure. The NCC developed the concept of a band identifier that would be a three-letter alpha identifier naming the type of channel—calling, law enforcement, tactical, EMS, fire, data, and mobile repeater; then a two-digit unique identifier for each of the 89 (at the time) national interoperability frequencies. The Working Group developed an idea that would keep the two-digit identifier for national interoperability channels, and use a three-digit identifier for state and regional channels, using the FEMA structure to determine the first digit of that identifier. The Working Group suggests that within each region, the SIECs will need to agree on a Regional Clearinghouse to maintain the master channel list for that region.

The Working Group will conduct an outreach effort via the NPSTC Participants listserv and the RPCs, and present the NCC scheme for common nomenclature to the Governing Board as the discussion matures.

Software Defined Radio (SDR) Working Group

During the Second Quarter, the Software Defined Radio (SDR) Forum's report on *SDR Technology for Public Safety* was released in April 2006.. At the April Forum meeting, the Public Safety Special Interest Group (PS SIG) began work on security issues, cognitive use cases, and cost modeling. Within the security area, the PS SIG is primarily examining the way current standards activities are handling security and whether there are additional requirements that would be necessary to accommodate SDR capabilities. Cognitive use casework will build on and build out existing scenarios from the SAFECOM SoR. The objective is to provide developers with a better understanding of the applications of cognitive capabilities in public safety. Associated with this effort is the International Association of Electrical and Electronics Engineers (IEEE) 1900 standards activity, mostly focused on 1900.1, attempting to develop a set of definitions for cognitive radio. There are several schools of thought in the effort. The PS SIG is trying to convey the need to think of cognitive capabilities as those that are distributed in a network, not in a single radio, and that the role of cognitive radio in public safety is much more about performance enhancement than spectrum utilization.

One of the conclusions of the SDR report was that there's currently no analytical way to look at the life cycle costs. The cost model is working to develop a comprehensive hierarchy of costs associated with research, development, deployment, and maintenance of public safety radio systems. The approach is to first capture the cost elements, assign relative costs, and look at different models for different types of system. The objective is to better quantify the impact of SDR technologies on life cycle costs; for example, by evaluating the tradeoff between the increased security required for over the air reprogramming versus the cost benefit.

Cognitive Radio Working Group

During the quarter, the Cognitive Radio Working Group continued its study of cognitive radio applications using public safety scenarios. Initial work will focus on several broad areas, broken down into several subsystems, including the connection rules, the "brain" of the device, and then the user interfaces. The whole concept of cognitive radio is teaching it to automate those functions. For each of a number of identified technology areas, the Working Group will research technology capabilities, perform analyses and simulations, and come to conclusions regarding requirements, current capabilities, and future development efforts. The report should be complete by November 2006.

Much work is expected in the policy area. The SDR PS SIG and the Cognitive Radio Working Group are working together in two tracks: SDR is focusing on policy rules gap analysis, while the Working Group is focusing on technology gap analysis. Together they are working to modify SAFECOM scenarios to make them more applicable to needs of testing cognitive radio, with a large terrorist scenario with micro components at a chemical plant envisioned.

Project MESA Working Group

The Project MESA Working Group continues to monitor and participate in Project MESA , which held a "make or break" meeting in Boston in April. At Project MESA's last meeting, there were discussions regarding the possibility of making MESA a practitioner only group because of the dwindling level of vendor participation; however, in April, industry participation was excellent and Project MESA will continue to work on its original mission.

System Interconnect Working Group

During the Second Quarter, the System Interconnect Working Group finalized the white paper on gateways, which has been thoroughly vetted by members of the public safety community who are very knowledgeable on gateways. This document initially focused on fixed gateways, but now includes mobile gateways and licensing issues.

Broadband Interoperability Working Group

Created during the First Quarter, the Broadband Interoperability Working Group, will coordinate with the work of the Broadband Task Group. The initial phase of the Working Groups will focus on network interoperability.

At the June Governing Board meeting, the Committee reported on a testbed project to demonstrate nationwide interoperability capability across the country. The project is using federated authentication and is similar to security work

being done through GLOBAL, where each agency controls its own information through a trust model that is analogous to passport agreements between countries that engage in commercial activities with each other. The partners in this tri-state, 700 MHz network of networks are the NCR; Phoenix, Arizona; and San Diego and the Silicon Valley Regional Interoperability Project (SVRIP) in California. The testbed's interoperable design allows mobile users to move between locations and still have access to home and share information; seamless state and regional information sharing and federal information sharing across multiple jurisdictions; secure roaming using carrier networks for backup and geographically diverse operations; and standards-based implementation for regional autonomy without sacrificing interoperation. Within the testbed, each jurisdiction retains its own secure networks.

Regional Planning Committee (RPC) Committee

The NPSTC RPC Committee currently oversees the activities of the following Working Groups: Funding, Rebanding Support, and Common Nomenclature.

New Items for Governing Board Review

During the Second Quarter of 2006, the Governing Board approved the following items recommended to the Board by the RPC Committee.

- Approve creation of the National Planning Oversight Committee (NPOC) and place it under the guidance of the Interoperability and RPC Committees.

The Committee is working to develop training initiatives for the RPCs to begin in November. To help expand the involvement with RPCs, the Committee will also be adding alternate regional representatives from each of the four geographical regions. The RPC Committee will add a Software, Tools, and Training Working Group, and will be developing requirements, defining tools such as CAPRAD, and developing access and training to these tools.

The Committee is working with the Spectrum Management Committee to ensure the regions are educated on the ramifications to 700 MHz associated with the Access Spectrum comments on FCC WT Docket 96-86 NPRM. The Committee would like to request assistance from the TA to promote and/or educate users on the benefits of adopting the common nomenclature of the NCC scheme as rebanding occurs.

The Committee held a brainstorming discussion to determine the types of resources and support that would be valuable for NPSTC to provide to the RPCs during its Committee meeting in June.

Funding Working Group

The Funding Working Group has developed funding policies and started to provide funding to the RPCs for travel and 700 MHz plan development, and has also discussed expanding the funding potential to support the new Software, Tools, and Training Working Group. NPSTC has developed a brochure that describes approved expenditures, which is on the website.

Common Nomenclature Working Group

At the January Governing Board meeting, the Common Nomenclature Working Group determined that one of the first steps in achieving common nomenclature was to survey the RPCs about what nomenclature they use. The survey basically asked whether the NCC nomenclature is used in the queried region; if so, on what bands; if not, what scheme is being used on each band; and whether there are any plans to adopt the NCC scheme in the region. In March, the Working Group sent 95 emails to RPC Chairs and received only 11 responses. At the IWCE colloquium, 30 more copies were distributed and four were received back. From those 15, only 4 have indicated that they follow the NCC scheme and that is only for 700 MHz. The states of Florida, California, and Texas will be adopting the NCC scheme as part of the 800 MHz rebanding. The lack of response seems to indicate that there is not much buy in to the NCC scheme at this time, indicating a need for this Working Group to move forward into an education and outreach effort on the importance of the NCC scheme.   From discussions at the IWCE, it is clear that acceptance is heightened as the development rationale and

history of the scheme is explained to most RPCs. The Working Group will send the common nomenclature RPC survey to the SIECs to increase the base of knowledge.

Rebanding Support Working Group

The Rebanding Support Working Group met with the TA several times during the Second Quarter. From these discussions, they have developed a laundry list of action items that include hosting webinars, with public safety as the key sponsor rather than the TA; sending surveys similar to the common nomenclature survey regarding public safety problems with the rebanding; identifying lessons learned from successful agencies; and reaching out to private resources such as consultants who have good information to provide. During the APCO national conference, the TA will have a resource room where they will provide focused training on items such as planning funding and the fast track process.

Future NPSTC Activities

The NPSTC Governing Board will hold its next quarterly meetings on November 14-17, 2006, in Long Island, New York. Day one will comprise a full day of RPC meetings and training, followed by Committee meetings on day two, the Governing Board meeting on day three, and an Executive Committee meeting on Friday, November 17. RPC training will also be offered on the first day of the next three 2007 meetings. Dates and locations for NPSTC meetings in 2007 are as follows: February 5-7, 2007, Orlando, Florida; June 11-13, Denver, Colorado; September 10-12, Washington, D.C.; and November 14-16, Long Island, New York.

The Executive Director and the NPSTC Support Office will meet in Denver in July to participate in a bi-annual strategic review of best practices in support of NPSTC and how they can be improved as well as planning for upcoming meetings and NPSTC publications. The Governing Board and Executive Committee will hold a planning meeting in Denver in September 26-28, 2006.

Formed on May 1, 1997, NPSTC is a federation of organizations 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 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 FCC Public Safety National Coordination Committee (NCC) and the support and development of the Computer Assisted Pre-coordination and Resource Database System (CAPRAD) for 700 MHz spectrum to assist the Regional Planning Committees (RPCs). NPSTC develops and makes recommendations to appropriate governmental bodies regarding public safety communications issues and policies that promote greater interoperability and cooperation between Federal, State and local agencies. Issues include: 4.9 GHz rebanding, Software Defined Radio (SDR), US/Canadian/DTV Transition, Project MESA, Spectrum Resources, Amateur Radio (ARRL), 800 MHz, State Interoperability Executive Committees (SIECs) Broadband, and the International Telecommunications Union.