GUIDELINES FOR 764-776/794-806
REGIONAL PLANNING COMMITTEES

The guidelines in this document are suggested methods to be used by the 700 MHz Regional Planning Committees in developing their specific Regional Plans, except for the sections that refer to the National Interoperability Channels. The sections relating to use of the Interoperability Channels are **_requirements_** in many areas throughout this document and must be strictly followed.[1]

OVERVIEW

When developing their plans, 700 MHz Regional Planning Committees need to consider these points:

- Establishment of the 700 MHz RPC (membership, voting, succession, boundaries)
- Agreement with adjacent regions on spectrum sharing
- Existing mutual aid and sharing agreements between RPC members
- Availability of 700 MHz Channels within the region is contingent upon existence of Incumbent co-channel and adjacent channel Broadcast TV stations
- Frequency Coordination
    - Multiple Coordinators
    - Technical parameters for coordination
    - Initial, pre-coordination, allotment of channels
    - Use of "Public Safety Pre-Coordination Database" [also referred to as the NLECTC pre-coordination database]
- Dispute Resolution/Conflict Resolution
    - Formation of a 700 MHz National Planning Oversight Committee [proposed]
    - The Chairman of each region plus representatives from the FCC-certified public safety frequency coordinators and representatives from the FCC meeting at least once a year. May include federal Frequency Managers (NTIA)
- Funding for
    - Regional Planning Process to facilitate outreach awareness (education)
    - Equipment Purchase - explore Federal, Local and State Programs

Frequency Availability

Once established, a Regional Planning Committee needs to determine the availability of 700 MHz spectrum within the region. Some regions have all the 700 MHz channels available immediately in all parts of the region. Other regions have a portion of the 700 MHz spectrum available in certain parts of the region. The transition from broadcast to land mobile services in the 746-806 band may not be a quick process in many regions of the United States. Incumbent analog TV broadcast stations have until 12/31/2006 to cease analog television operations (with

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[1] Footnotes throughout the section relating to the use of the Interoperability (I/O) channels indicate which guidelines are NCC recommendations and which guidelines are required by FCC regulations.

several market penetration limitations that might extend that date). Incumbent digital TV broadcast stations must transition out of the 746-806 MHz spectrum, but may be delayed until after 12/31/2006 awaiting spectrum below 698 MHz (TV core spectrum on channels 2-51) to become available. Secondary television stations (LPTV, TV translator, boosters) can continue operations until primary users (public safety) are constructed and operational. Commercial Mobile Radio Service (CMRS) operators in the adjacent 30 MHz, who want to implement systems before 12/31/2006, may provide incentives to relocate incumbent TV stations.

Regions adjacent to the Canadian or Mexican border need to confirm the availability of channels within 120 km of the border, because Canada and Mexico are not transitioning this spectrum from broadcast to land mobile usage on the same schedule as the United States. Within 120 kilometers of the Canadian or Mexican border, availability of frequencies may be limited by current and future treaties. Also, license applications within 400 km of Canadian border are subject to review.

Information on each region's spectrum availability can be located on the NLECTC pre-coordination database. A complete band plan for the 700 MHz band is included as Appendix M of this document.

Frequency Coordination

Coordination of the 700 MHz band is open to all FCC certified public safety frequency coordinators. Both the RPC and the coordinators are responsible for updating and maintaining the common NLECTC pre-coordination database.[2] See sample application flow procedures in Appendix G.

Numerous technologies with different channel bandwidths may be used in this band. This creates numerous co-channel and adjacent channel frequency coordination scenarios. Out-of-band emissions are based upon interference (adjacent channel coupled power) rather than emission masks. To account for the varying technologies, bandwidths, and emissions, and to efficiently use the spectrum, it is recommended that coordinators utilize a common methodology. Coordination programs shall utilize terrain-based propagation modeling that encompasses the methodologies of TIA/EIA[3] TSB-88A ("*Wireless Communication Systems, Performance In Noise And Interference-Limited Situations, Recommended Methods For Technology-Independent Modeling, Simulation and Verification*"). Information on co-channel performance criteria and adjacent channel intercepted power for various technologies and channel bandwidths may be found in Appendices A and C of that document.

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[2] In the 4th R&O in Docket 96-86, the FCC declined to make the NLECTC database mandatory but instead asked the NCC to 'continue to monitor the efforts under way to develop the database and report to the Chief, WTB, once the database is complete.' (paragraph 20 4th R&O)

[3] The Telecommunications Industry Association (TIA) is a Standards Development Organization (SDO) certified by the American National Standards Institute to develop standards for the land mobile communications sector.

SPECIFIC GUIDELINES FOR EACH ASPECT OF THE DRAFT NATIONAL/REGIONAL PLAN

ESTABLISHING THE REGIONAL COMMITTEE/HOLDING THE FIRST MEETING

ITEM 1.   CHAIRPERSON

Docket 96-86 requires the current NPSPAC (821-824/866-869 MHz) RPC Chairpersons to select a 700 MHz RPC convener. Interested parties may contact the current NPSPAC RPC chairperson to determine if the 700 MHz RPC convener has been selected. NPSPAC RPC chairpersons should notify the FCC Wireless Telecommunications Bureau, (email Joy Alford at Jalford@fcc.gov) and the 764-776/794-806 MHz RPC conveners will be listed on the FCC's website – http://www.fcc.gov/wtb/publicsafety/700MHz.

The 700 MHz RPC Chairperson shall be elected at the first RPC meeting.   Before the meeting, a temporary secretary shall be selected to take the minutes of the first meeting.   After the Chairman is elected, the committee must adopt bylaws, elect remaining officers, organize standing committees (e.g., interoperability committee – define I/O criteria[4]; planning committee – to write the plan; education/outreach committee – to promote awareness, survey user needs, contact eligible parties, etc.), and appoint standing committee chairs. The responsibilities of each standing committee must be documented.

RPC Officers' Term limits and succession procedures should be included in the by-laws. See sample Bylaws (Appendix F).

Once developed, if a region chooses not to administer its plan, the certified frequency coordinators would be permitted to continue to process applications consistent with the existing plan. If the RPC disbands prior to the adoption of a 700 MHz plan, and its members did not choose to establish separate plans pursuant to the options discussed in paragraphs 85 (opt-out)[5] and 86 of WT Docket No. 96-86, the certified public safety frequency coordinators could come to consensus and adopt a joint default plan, approved by the Commission, and process applications based on that plan. The frequency coordinators' authority to use the default plan would be terminated by FCC approval of an applicable regional plan for the region or any of its members. Any amendments or modifications to the default plan would require prior FCC approval.

RECOMMENDATION: If a region has not formed or has not written its Regional Plan within three years of the formal adoption of the 700 MHz National Plan, the FCC-certified public safety

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[4] In the 4th R&O, the FCC decided that each State would be responsible for administering the I/O channels and gave a deadline of 12/31/01 for each State to notify the Commission whether it would accept that responsibility. If notification from the state was not received by 12/31/01, the administration of the I/O channels reverted to the RPC on 1/01/02.   The NCC recommended that States who choose to administer the 700 MHz I/O channels should use the recommendations provided herein.

[5] The deadline for a region to 'opt out' of its current region was July 2, 2001. See FCC Public Notice DA 01-58 released January 10, 2001. The document is available on the FCC's website, www.fcc.gov/wtb/publicsafety/under 700 MHz National and Regional Planning.

frequency coordinators and the 700 MHz Regional Chairpersons of the adjacent regions, or the 700 MHz National Planning Oversight Committee (or a combination thereof) shall take responsibility for developing that region's plan.

ITEM 2.   NAMES, MAILING ADDRESSES, PHONE NUMBERS AND AFFILIATIONS OF ALL RPC MEMBERS

RPC shall maintain a current list of members (and other active participants) with their affiliation and contact information. Include contact information sponsoring agency or alternates.   The current officers of the RPC should be clearly identified.

Each RPC shall establish membership criteria based upon adopted Bylaws

- Voting members
- Non-voting participants
- Categories of eligibility such as police, fire, EMS, general, etc.
- Procedures for alternate/substitute members including written proxy

ITEM 3.   A DESCRIPTION OF THE REGION AND THE ELIGIBLE ENTITIES

The RPC shall describe the cities, counties, and/or other political entities that make up the region, the description may include detailed population numbers. Eligibility shall be defined in the bylaws adopted by each RPC.

If the RPC is administering the I/O channels, the RPC shall catalogue the existing interoperability contracts, compacts, mutual aid agreements, etc. that are currently in place. This would be useful in the future for reviewing how the applicants for 700 MHz channels will continue to meet interoperability obligations and be affected by the additional I/O requirements of the 700 MHz band.

Note that federal agencies shall have access to the 700 MHz interoperability channels and may participate in shared, multi-jurisdictional systems.

ITEM 4.   AN EXPLANATION OF HOW ALL ELIGIBLE ENTITIES WITHIN THE REGION WERE GIVEN NOTICE AND AN OPPORTUNITY TO PARTICIPATE IN THE PLANNING PROCESS

The local convener shall give sixty days prior notice for the initial planning meeting of the 700 MHz RPC. Every effort must be made to notify all eligible entities within the region. The adjacent region's 821 and 700 MHz RPCs should be contacted.

The local convener shall use all reasonable resources to advertise the first meeting; e.g. FCC Public Notices, FCC Daily Digest, advertisements in public safety related publications, notices in

the appropriate public safety organization publications, communications related trade publications, local newspapers, mailings, electronic mailings.

The following organizations should be notified and/or used as resources in developing the initial mailing list.

- American Association of State Highway and Transportation Officials (AASHTO)
- American College of Emergency Physicians
- American National Red Cross
- Association of Public-Safety Communications Officials – International, Inc.(APCO)
- Federal Communications Commission Public Notice Process
- Federal Emergency Management Agency (FEMA)
- Federal Law Enforcement Wireless Users Group (FLEWUG)
- Forestry-Conservation Communications Association (FCCA)
- International Association of Chiefs of Police (IACP)
- International Association of Fire Chiefs (IAFC)
- International Bridge Turnpike & Tunnel Association (IBTTA)
- International Municipal Signal Association (IMSA)
- Local & State Government Advisory Committee
- National Association of Counties
- National Association of State EMS Directors
- National Governors Association
- National League of Cities
- National Public Safety Telecommunications Council (NPSTC)
- Public Safety Wireless Network (PSWN)
- US Conference of Mayors

The Regional Plan must list the steps undertaken to encourage and accommodate all eligible entities to participate in the planning process. Examples of material to include in the plan to meet this requirement are a description of steps taken to hold meetings in various parts of the region, copies of meeting notices and publications in which the notices were placed, and making all submission of materials available to each member. In particular, the FCC is encouraging the participation of Native American tribes. In addition, the Commission believes that all Regional Planning Committee meetings should be open to all members of the public safety community. Affording representatives of all entities in the public safety community the opportunity to participate in the planning process is essential.

Mutual Aid organizations should be contacted and included in the planning process. Since Non-Government Organizations (NGOs) may be licensed in the 700 MHz band with sponsorship by a governmental agency, they may also be encouraged to participate.

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Participation from the following organizations should be considered for mutual aid purposes:

Federal Agencies	**State Agencies**	**City/Township/Town**	**County**
Federal Marshal	Police	Police Dept.	Sheriff
Border Patrol	Fire Marshal	Parks	Parks
Coast Guard	DEQ	HAZMAT	HAZMAT
Navy/Army/Marines	DOT	Fire Dept.	Fire Dept.
HAZMAT	Dept. of Corrections	Schools	Road Commission
Dept. of Treasury	HAZMAT	Public works	Animal Control
Indian Tribal Nations	Transit Authority	Community Health	Ambulance Service
Forest Services	Community Health	Animal Control	Bridge Authority
Parks Services	Office of Emerg. Mgt.	Ambulance Service	Metro Parks
FEMA	DNR	Bridge Authority	Office of Emerg.Mgt.
DoT		Metro Parks	

Population Centers/Industry Business	**Public Service**	**Hospitals**	**Transportation**
Gas Company	Salvation Army	City	Harbor Master
Electric Company	Red Cross	County	Airport
Colleges/Universities/Schools	Private	Railroad	
Stadium(s)	Ambulance Service		Civil Air Patrol
Convention Centers	Bridge Authority		Toll Road
Factories			Bridge Authority

The RPCs should create and maintain a list of agencies within a region which need to be notified of the 700 MHz planning process.

After the first meeting, subsequent meetings can be held at any interval. A method for notification for subsequent meetings should be established.

Electronic Correspondence

To encourage the greatest possible participation, RPC should consider the use of electronic distribution to advertise meetings and disseminate information such as: Internet, email, list servers, web sites.

> Examples:
> http://www.fcc.gov/Daily_Releases/Daily_Digest/
> http://wireless.fcc.gov/publicsafety/700MHz/
> http://www.apcointl.org
> http://www.pswn.gov
> http://www.firehouse.com
> http://www.nvfc.org

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http://www.theiacp.org
www.doi.gov/bureau-indian-affairs.html
http://www.npstc.org
Each individual State's daily business registers
Each individual State's Emergency Management web site
State/Regional/Organization mail list servers or email

Once the RPC has been established, it should consider using a list-server to distribute information among the members and participants. As members are added to the RPC, they can be added to the list-server. An Email address can be set up so members can submit comments. E-mail may be used to distribute submissions between members of the Regional committee.

Funding for advertising, notification, start up costs and user education is available and should be coordinated through the NLECTC.

See Appendix E for a sample meeting agenda, Appendix H for details on NLECTC-sponsored start-up funding and contact address, and Appendix I for a sample FCC Public Notice.

ITEM 5.   SUMMARY OF THE MAJOR ELEMENTS OF THE PLAN

Each RPC must decide how the general use frequencies and low power, on-site frequencies will be allocated within the region and how frequencies will be coordinated near regional boundaries. Such major decisions as pre-coordination procedures within the region and with adjacent regions, application solicitation and processing, how the matrix was applied and how spectrum efficiency was encouraged should be summarized in this section.

The NCC's decisions on the use of the interoperability channels are mandatory.[6] A statement to the effect that the interoperability channels will be used in accordance with the NCC's recommendations should be included in this section.

See also Item 8 below.

ITEM 6.   DESCRIPTION OF HOW NATIONAL INTEROPERABILITY CHAN-NELS ARE TO BE USED WITHIN THE REGION [7]

The narrowband voice & data interoperability channels (sixty-four at 6.25 kHz bandwidth) are defined on a nationwide basis. Appendix A shows the designation of these channels as defined by the NCC. Since they are nationwide channels, each channel must have the same usage within each region and across regional borders. They have been sub-divided into different service categories.

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[6] The FCC adopted many, but not all, of the NCC's recommendations for the I/O channels and incorporated those recommendations into the 700 MHz rules. The FCC encouraged RPCs to follow the NCC recommendations that were not included in Part 90.

[7] See Footnote 4. If the State chooses to administer the I/O channels, the State should use this section of the Guidelines to develop a statewide I/O plan.

The current proposal, adopted by the NCC, is to use the ANSI/TIA 102 Standards (i.e., Project 25 digital protocols) as the Digital Interoperability Standard for the conventional-only mode of operation on the narrowband voice & data interoperability channels.[8]

There are 2 Calling channel sets and 30 Tactical channel sets.   Channel Sets are comprised of two 6.25 kHz channels each.

The Tactical channel sets are subdivided into the following recommended categories: [9]
4 for Emergency Medical Services,
4 for Fire Services,
4 for Law Enforcement Services,
2 for low speed data
2 for Mobile Repeater operation,
2 for Other Public Services, and
12 for Public Safety General Services

Calling Channels

Because the 700 MHz band will be initially encumbered by broadcast television, two of the interoperability channels sets are reserved as "Calling Channels".[10] The State (or RPC)[11] must define when and where the two calling channels are to be used. These calling channels, which appear in the Table of Interoperability Channels (Appendix A) as "7CALLA" and "7CALLB"[12] must be monitored, as appropriate, by licensees who employ interoperability infrastructure in the associated channel group.[13] When calling channels are integrated into infrastructure, their coverage must at least match the coverage of the other interoperability channels in the system. In addition to the usual calling channel functions, the calling channels may to be used to notify users when a priority is declared on one or more of the tactical interoperability channels.

Tactical Channels

All Interoperability channels, except as described below, shall be used for conventional-only operation. Normally, users will 'call' a dispatch center on one of the "Calling Channels" and be assigned an available tactical channel. Deployable narrowband operations (voice, data, trunking)

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[8] Voice and Data Interoperability standards were decided in the 4th R&O in Docket 96-86 and can be found in Part 90 of the Code of Federal Regulations (CFR). Voice I/O standard documents are listed in 90.548(a)(i); data I/O standard documents are listed in 90.548(a)(ii).

[9] In the 4th R&O, the Commission declined to adopt the NCC's recommended channel designations into the rules. The categories listed above were recommended by the Interoperability Subcommittee (IOSC).

[10] The 764-776 and 794-806 MHz spectrum was re-allocated from television broadcasting (channels 63, 64, 68, & 69) to Public Safety. Until incumbent broadcasters move out of this spectrum, Public Safety may be blocked from implementing systems. Therefore, two channel groups have been established, 63 paired with 68 and 64 paired with 69. Anticipating that one of these channel groups may become available prior to the other, two Calling Channels were defined, one in each channel group.

[11] See Footnote 4.

[12] The 700 MHz calling channels are listed in 90.531(b)(1)(ii)

[13] In the 4th R&O, the FCC declined to mandate monitoring or other administrative requirements for the I/O channels. Instead, the State (or RPC) is tasked with addressing those issues.

shall be afforded access to the same pool of channels used for similar fixed infrastructure operations. In the event of conflict between multiple activities, prioritized use shall occur.

Encryption

Use of encryption is prohibited on calling channels and permitted on all other interoperability channels. A standardized encryption algorithm for use on the interoperability channels must be TIA/EIA IS AAAAA Project 25 DES encryption protocol.[14]

Deployable Systems

General Public Safety Services Channels labeled 7GTAC5 through 7GTAC15, 7GTAC35 through 7GTAC45, or both, shall be made available for "deployable" equipment used during disasters and other emergency events that place a heavy, unplanned burden upon in-place radio systems. States (or Regional Planning Committees)[15] shall consider the need for both "deployable trunked" and "deployable conventional" systems and make those channels available to all entities in their State/region.

Trunking on the Interoperability Channels

Trunking the Interoperability channels on a secondary basis shall be limited to operation on eight specific 12.5 kHz channel sets, divided into two subsets of four 12.5 kHz channels. One subset is defined by 7GTAC5 through 7GTAC11 and the other by 7GTAC35 through 7GTAC41.[16]

Any licensee implementing base station operation in a trunking mode on Interoperability Channels shall provide and maintain on a continuous (24 hr x 7 day) basis at its primary dispatch facility the capability to easily remove one or more of these interoperability channels, up to the maximum number of such trunking channels implemented, from trunking operation when a conventional access priority that is equal to or higher than their current priority is implemented.[17]

While it may be desirable for the States (or Regional Planning Committees)[18] to permit trunked radio systems to incorporate one or more of the Interoperability channels into a single trunking system as a means of enhancing the use of the system for interoperability purposes (and by implication allow those channels to be routinely used for normal day-to-day communications), care must also be given to ensure that those channels do not become such an integral part of the trunked system operation that it becomes politically and technically impossible to extract them from the trunked system in the event of an emergency event having higher priority. For this reason, the Interoperability Subcommittee recommends that States (or Regional Planning

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[14] Prohibition of encryption on the calling channels and the encryption protocol to be used on the other I/O channels was determined in the 4th R&O. Information on encryption may be found in 90.553 of the CFR.

[15] See Footnote 4.

[16] Trunking recommendations adopted in the 4th R&O. A list of the channels that may be used for secondary trunking can be found in 90.531(b)(1)(iii)

[17] In the 4th R&O, the FCC stated it was 'appropriate to require such monitoring' but delegated to the States (or RPCs) the task of determining how monitoring would be accomplished.

[18] See Footnote 4.

Committees)[19] limit the number of Interoperability channels that may be integrated into any single trunked system to the following amounts:

> For systems having 10 or fewer "general use" voice paths allocated, one (1) trunked Interoperability Channel set is permitted. For systems having more than 10 "general use" voice paths allocated, two (2) trunked Interoperability Channel sets are permitted.

> States (or Regional Planning Committees)[20] may consider allotting additional Interoperability Channel set(s) for trunked systems having more than 20 "general use" voice paths allocated upon a showing of need and upon a determination that assignment of the Interoperability Channel set(s) will not adversely impact availability of those channels to other trunked and/or conventional radio systems in the area (e.g. a single consolidated trunked system servicing all public safety agencies in an area might satisfy this criterion). The maximum number of Interoperability channel sets for trunked systems permitted for use by an individual licensee is four.[21]

> The channels (two 6.25 kHz pairs) in Reserve Spectrum immediately adjacent to the 7GTAC channels where secondary trunking is permitted [(21, 22), (101, 102), etc.] are available for secondary trunking, but only in conjunction with the adjacent Interoperability 12.5 kHz channel pair in a 25 kHz trunked system[22] and will be administered by the State (or Regional Planning Committee)[23]. If a State (or RPC) elects to permit 25 kHz trunking on interoperability channels, these Reserve Spectrum guard channels would become part of those trunking channels. In making a decision to allow 25 kHz trunking on these interoperability channels, States (or RPCs) must consider the impact on the channels adjacent to these 25 kHz trunking channels. Additionally, the State (or RPC) must consider the impact to the ability of these 25 kHz trunking channels to be immediately reverted to 12.5 kHz conventional interoperability use.

Standard Operating Procedures on the Trunked I/O Channels for I/O Situations above Level 4

The safety and security of life and property determines appropriate interoperable priorities of access and/or reverting from secondary trunked to conventional operation. In the event secondary trunked access conflicts with conventional access for the same priority, conventional access shall take precedence. Access priority for "mission critical"[24] communications is recommended[25] as follows:[26]

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[19] See Footnote 4.

[20] *ibid.*

[21] See 90.531(b)(1)(iii).

[22] In the 4th R&O, the FCC adopted this recommendation. See 90.531(b)(7).

[23] See Footnote 4.

[24] Mission critical use shall not include nor imply administrative or non-mission critical applications.

[25] In the 4th R&O the FCC declined to adopt the NCC's recommended priority access procedures. The state (or RPC) should develop priority access procedures and resolve disputes. The Priority Access procedures recommended by the NCC are presented here as a model for use by the States (or RPCs).

1. Disaster and extreme emergency operations for mutual aid and interagency communications;
2. Emergency or urgent operation involving imminent danger to life or property;
3. Special event control, generally of a preplanned nature (including Task Force operations);
4. Single agency secondary communications.[27] *Priority 4 is the default priority when no higher priority has been declared.*

For those systems employing I/O channels in the trunked mode, the State (or RPC)[28] must set up interoperability talk groups and priority levels for those talk groups so that it is easy for dispatch to determine whether the trunked I/O conversation in progress has priority over the requested conventional I/O use. States (or RPCs) must also determine whether a wide-area I/O conversation has priority over a local I/O conversation.

Standardized Nomenclature

Standardized nomenclature is recommended nationwide such that all 700 MHz public safety subscriber equipment using an alphanumeric display only be permitted to show the recommended label from the Table in Appendix A when the radio is programmed to operate on the associated 700 MHz channel set. The Table shows the recommended label for equipment operating in the mobile relay (repeater) mode. When operating in direct (simplex) mode, the letter "D" appended to the end of the label is recommended.[29]

Data Only Use of the I/O Channels

Narrowband data-only interoperability operation on the Interoperability channels on a secondary basis shall be limited to two specific 12.5 kHz channel sets. One set is defined by DTAC17 and the other by 7DTAC47.[30]

Wideband Data Standards

Within the 12 MHz of spectrum designated for high capacity, wide bandwidth (50 to 150 kHz) channel usage, there are eighteen 50 kHz (or six 150 kHz) channels designated for wideband interoperability use.

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[26] These access priorities are taken from the §4.1.21 of the Final Report of the Public Safety Wireless Advisory Committee dated September 11, 1996.

[27] This fourth priority would allow shedding traffic long in duration or overloading the non-interoperable system; but is not "two or more different entities" as defined in paragraph 76 of FCC 98-191. Overloading conditions should identify a potential need for expansion of the associated non-interoperable system.

[28] See Footnote 4.

[29] In the 4th R&O, the FCC declined to require labeling nomenclature on radios with alphanumeric labeling. NCC was directed to consider developing an industry standard for display labeling. The NCC's recommendations are offered here as a model for State (or RPC) planning.

[30] See 90.548(a)(ii) for data interoperability standard documents.

[PLEASE NOTE: The Technology Subcommittee has determined that there is no existing wideband standard that could be recommended for interoperability. The Technology Subcommittee has asked the Telecommunications Industry Association[3] (TIA) to develop a wideband data standard. TIA's TR-8 subcommittee is currently working on the development of a wideband data standard. TIA has accepted this request. A standard is expected by mid-2003.]

State Interoperability Executive Committees [31]

State Interoperability Executive Committees should be formed to administer a State Interoperability Plan in each state or territory. These plans should include, but not be limited to, interoperability operations on the 700 MHz interoperability channels. These committees should include an equal number of representatives each providing regional representation from state, county/parish (where applicable), and local governments, with additional representation from special districts and federal agencies, as appropriate. Such committees may represent all disciplines, in which case emergency medical, fire, forestry, general government, law enforcement, and transportation agencies from each level of government shall be represented equally. Alternatively, Committees may represent a single discipline in which case it is only necessary to have membership from the different levels of government previously described.

The state or states within a region or multiple regions should use the Incident Command System (ICS) as a guideline in developing their regional interoperability plans. See Appendix J. In the event that the state will not accept this responsibility, the RPC shall develop such plans.

The individual States may hold licenses on interoperability channels for all infrastructure and subscriber units within their state. In the event that a State declines to do so, it may delegate this responsibility to the RPC.[32]

The State (or RPC)[33] would have oversight of the administration and technical parameters of the infrastructure for the interoperability channels within their state (or region).

Recommended templates for a *Memorandum of Understanding for Operating the 700 MHz Interoperability Channels* and a *Sharing Agreement* are attached. The MOU shall be typed on appropriate committee letterhead and the Sharing Agreement on agency letterhead.[34] See Appendices B&C.

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[31] In the 4th R&O, the FCC determined that administration of the I/O channels should be done at the state level. While it supported the concept of SIECs, the Commission did not mandate that they be formed if a state already had a similar structure in place. See 90.525(a)

[32] See 90.525(b)

[33] See Footnote 4.

[34] In the 4th R&O the FCC endorsed but did not require the use of the recommended MOU and Sharing Agreement templates.

Minimum Channel Quantity

The minimum channel quantity for Calling and tactical channel sets requires 8 I/O channel slots in each subscriber unit. Including direct (simplex) mode on these channel sets, up to 16 slots in each radio will be programmed for I/O purposes. Backbone issues are deferred to the SIECs and/or RPCs.[35] Subscriber units, which routinely roam through more than one jurisdiction up to nationwide travel will require more than the minimum channel quantity.

The Calling channel sets (7CALLA and 7CALLB) shall be implemented in all voice subscriber units in repeat-mode and direct (simplex) mode. "Direct" mode is permitted in the absence of repeat operation or upon prior dispatch center coordination. If the local Calling channel set is not known, 7CALLA shall be attempted first, then 7CALLB. Attempts shall be made on the repeater mode first then on the direct (simplex) mode.

A minimum set of Tactical (TAC) channels shall be implemented in every voice subscriber unit in the direct (simplex) mode. Specific channel sets are shown below (SIECs or RPCs will have the option to exceed this minimum requirement.)

- 7GTAC13 & 7GTAC43 channel sets
- 7MTAC25 & 7MTAC55 channel sets
- 7OTAC33 & 7OTAC63 channel sets

NOTE: Selection of the above TAC channels based on revised Table of Interoperability Channels. Channel labels are a compromise between 4th R&O and IO-0062D-20010118.

Voice subscriber units subject to multi-jurisdictional or nationwide roaming should have all I/O voice channels, including direct (simplex) mode, programmed for use.

Direct (Simplex) Mode

In direct (simplex) mode, transmitting and receiving on the output (transmit) side of the repeater pair for subscriber unit-to-subscriber unit communications at the scene does not congest the repeater station with unnecessary traffic. However, should someone need the repeater to communicate with the party who is in "direct" mode, the party would hear the repeated message, switch back to the repeater channel, and join the communications. Therefore, operating in direct (simplex) mode shall only be permitted on the repeater output side of the voice I/O channel sets.

Common Channel Access Parameters

Common channel access parameters will provide uniform I/O communications regardless of jurisdiction, system, manufacturer, etc. Thus, the Calling and TAC channels (all of them) should include a common NAC as the national standard. The secondary, trunked I/O channels would be excluded in the trunked mode. However, when reverted to conventional I/O, the common NAC

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[35] See Footnote 4.

would then apply. This national requirement should apply to base stations and subscriber units. This should apply to fixed or temporary operations. This should apply to tactical, vie, or other mutual aide conventional I/O use.

Common channel access parameters for all voice I/O shall utilize the default values (ANSI/TIA/EIA-102, BAAC-2000, approved April 25, 2000) provided in every radio regardless of manufacturer. Any common channel access parameters not provided shall be programmed accordingly. These parameters include the following:

> P25 Network Access Code - $293 (default value)
> P25 Manufacturers ID - $00 (default value)
> P25 Designation ID - $FFFFFF (designates everyone)
> P25 Talk group ID - $0001 (default value)
> P25 Message Indicator $000000…0, out to 24 zeros (unencrypted)
> P25 Key ID - $0000 (default value)
> P25 Algorithm ID - $80 (unencrypted)

Any deviation from $293 will not be permitted unless the SIEC (or the RPC)[36] can demonstrate in Plan amendment through the FCC-approved process that the intent of $293 will be preserved on ALL conventional voice I/O channels – transmit and receive.

ITEM 7.   ADDITIONAL SPECTRUM SET ASIDE FOR INTEROPERABILITY WITHIN THE REGION

An individual region shall have the ability to assign additional spectrum within that region for Interoperability. The spectrum will only be available for use within that region. The RPC must designate which channels will be used, out of the General Use spectrum and must update the NLECTC pre-coordination database. The RPC shall justify the assignment of this additional spectrum and include operational guidelines as well as user criteria with eligibility requirements. A region requesting additional Interoperability spectrum must get concurrence from adjoining regions and must include a letter of concurrence from the adjoining regions.

ITEM 8.   ALLOCATION OF "GENERAL USE" SPECTRUM

All regions should use the following pre-planning methods to avoid problems with adjacent region coordination. This assures that adjacent regions that do not immediately form a Regional Planning Committee and develop plans are not completely blocked at the RPC borders.

1. Each county or area within the region may be given an initial allotment. Counties or other geographic subdivisions within 70 miles of regional border must share spectrum with the adjacent region(s). The appropriate ratio of channels shall be allotted to counties/areas in adjacent regions based upon each county's population. The use of the term 'county' in this

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[36] See Footnote 4

paragraph is for planning purposes only, and should not be considered an allocation or assignment to a specific county or agency.

2. Applications within the region would be handled on a first-come, first-served basis.

3. If a region has not yet exhausted its 821 MHz allotment, the 700 MHz RPC should work with the 821 RPC, encouraging it, where technically appropriate, to complete the 821 MHz allocation before allocating the 700 MHz spectrum.

To allocate 700 MHz channels near the region borders, a 25 kHz building block will be used to distribute spectrum. Since there may be multiple technologies (FDMA, TDMA, etc.), bandwidths (6.25, 12.5, 25 kHz), and modulations, 25 kHz is the common bandwidth allowing any technology to be used. The use of 25 kHz building blocks allows for technology-neutral pre-planning. If a licensee chooses a technology that does not use their entire 25 kHz allotment, they shall return the unused bandwidth to the region's 'general use' pool or work with the RPC and/or frequency coordinators to trade for another equivalent allotment. Care must be taken to avoid creating orphan channels that can not be used.

If, after five years, the county or city/town has not built out a system at 700 MHz, its allotted frequencies would be placed back into the region's 'general use' pool and be available to any applicant on a first-come, first-served basis.

Items that may affect planning are:
   Pre-coordination procedures
- Procedures for allocation of both narrowband (less than or equal to 25 kHz) and wideband (greater than or equal to 50 kHz) channels
- Allocate frequencies to geographic areas prior to assignment. This will minimize changes to Regional Plan when actual frequencies are assigned to specific entities (each county, each city/town, etc)
- Criteria
   - population or population density
   - percentage
   - per-capita
   - minimum number of channels per entity
   - major needs
   - actual requests
   - regional, wide-area systems
   - should there be allotment to areas where there is little/no demand?
- Exact frequencies versus percentage of frequencies
- No exact antenna site locations for pre-coordination data
   - coordinate using county/city centroid
- Unique terrain conditions that affect allocations
   e.g., California's Central Valley
- Coordination of the 18 low power, on-site frequencies

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Regions shall define their application solicitation and processing methodology. Items to consider:

- Filing windows
- First-come, first-served
- Set-asides, reserve pools
- Time period for the RPC to review the applications

Re-assignment/re-allotment and/or recovery of channel allotments

- Slow growth procedures
- Time limit on channels licensed and not constructed – 5 years

Procedures to use near Canadian or Mexican border (if applicable)

The NLECTC pre-coordination database and application flowchart must be used; see Appendix G.[37] The RPC and the frequency coordinators are responsible for ensuring that the information contained in the NLECTC pre-coordination database is updated when licenses are granted or canceled and/or allotments changed.[38]

ITEM 9. AN EXPLANATION OF HOW NEEDS WERE ASSIGNED PRIORITIES IN AREAS WHERE NOT ALL ELIGIBLES COULD RECEIVE LICENSES.

A matrix should be used to evaluate competing applications within the region. Each region is free to award point values to each category as it sees fit. The total point value should total 1000 or some factor of 10. The applications receiving the highest number of points will receive the channels. There are seven scoring categories:

- Service (Maximum score 350 points)

    Police, fire, local government, combined systems, multi-jurisdictional systems, etc.

- Intersystem & Intra-system interoperability (Maximum score 100 points)

    How well the proposed system will be able to communicate with other levels of government and services during an emergency on "regular" channels, not the I/O channels. Interoperability must exist among many agencies to successfully accomplish the highest level of service delivery to the public during a major incident, accident, natural disaster or terrorist attack. Applicants requesting 700 MHz spectrum shall inform the region of how and with whom they have been achieving interoperability in their present system.

    The applicant shall stipulate how they will accomplish interoperability in their proposed system (gateway, switch, cross-band repeater, console cross-patch, software defined radio or other means) for each of the priorities listed below:

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[37] See Footnote 2

[38] *ibid.*

1.   Disaster and extreme emergency operation for mutual aid and interagency communications.

2.   Emergency or urgent operation involving imminent danger to life or property.

3.   Special event control, generally of a preplanned nature (including task force operations).

4.   Single agency secondary communications. *Priority 4 is the default priority when no other priority is declared and includes routine day to day (non-emergency) operations.*

- Loading (Maximum score 150 points)

  Is the system part of a cooperative, multi-organization system? Is the application an expansion of an existing 800 MHz system? Have all 821 channels been assigned (where technically feasible)? A showing of maximum efficiency or a demonstration of the system's mobile usage pattern could be required in addition to loading information. Based on population, number of units (if number of units, are they take home, how many per officer), what are the talk groups?

- Spectrum Efficient Technology (Maximum score 350 points)

  How spectrally efficient is the system's technology? Trunked systems are considered efficient "as well as any technological systems feature, which is designed to enhance the efficiency of the system and provide for the efficient use of the spectrum."

- Systems Implementation Factors (Maximum score 100 points)

  Demonstrate funding, demonstrate system planning. Provide a construction and implementation schedule. Is this going to be slow growth (within the next five years) or is it something that's ready to be implemented now? A document stipulating what the agency is planning to implement signed by an official within the organization who handles the money is required. Some concerns expressed in this category were: how one legally provided a document that proves subsequent year funding; the money does not start flowing until the equipment is in place; some agencies cannot bond until they have the frequencies.

- Geographic Efficient (Maximum Score 100 points)

  The ratio of subscriber units to area covered and the channel reuse potential were the two subcategories in this one. "The higher the ratio (mobiles divided by square miles of coverage) the more efficient the use of the frequencies. … Those systems which cover large geographic areas will have a greater potential for channel reuse and will therefore receive a high score in this subcategory."

- Givebacks (Maximum score 200 points)

    Consider the number of channels given back
    Consider the extent of availability and usability of those channels to others.

     Total evaluation points above add up to 1350.

ITEM 10.   AN EXPLANATION OF HOW ALL THE REGION ELIGIBLES' NEEDS WERE CONSIDERED, AND TO THE EXTENT POSSIBLE, MET.

Document the process and procedures followed to determine the applicant's needs and how those requests were evaluated. The region should explain how it opened filing windows, or how it processed the applications it received, used a matrix (described in Item 9 above) to evaluate and "weight" requests for frequencies, the percentage of requests it was able to meet, how many were turned down, how mutually exclusive applications were handled, when & how public notification and review of applications took place.

ITEM 11.   EVIDENCE THAT THE PLAN HAS BEEN SUCCESSFULLY COORDI-NATED WITH ADJACENT REGIONS.

As each region forms and begins to develop its regional plan, it must contact the chairs or the conveners of the adjacent regions to determine the status of that region's plan. In cases where the adjacent region(s) have not yet formed, the "first-in" RPC shall utilize the Pre-planning proposal listed in the next paragraphs and be exempt from the adjacent region concurrence requirement.   As regions adjacent to the "first-in" RPC develop plans, the first-in RPCs concurrence is required.

The Implementation Subcommittee recommends that all regions use the following pre-planning method to facilitate coordination with adjacent regions. This protects adjacent regions that do not immediately form a Committee and establish a plan from becoming completely blocked at the RPC borders.

Each county or area within the region may be given an initial allotment. Counties or other geographic subdivisions within 70 miles of regional borders must share spectrum with the adjacent region(s). The appropriate ratio of channels shall be allotted to counties/areas in adjacent regions based upon each county's population.   To allocate 700 MHz channels near the region borders, a 25 kHz building block will be used to distribute spectrum. Since multiple technologies (FDMA, TDMA, etc.), bandwidths (6.25, 12.5, 25 kHz), and modulations will be available, 25 kHz is the common allotment bandwidth. The use of 25 kHz allotment bandwidth allows for technology-neutral pre-planning. If a licensee chooses a technology that does not use their entire 25 kHz allotment, they shall return the unused bandwidth to the region's 'general use' pool or work with the RPC and/or frequency coordinators to trade for another equivalent allotment. Care must be taken to avoid creating orphan channels that cannot be used.

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If a region has not yet exhausted its 821 MHz allotment, the 700 MHz RPC should work with the 821 RPC, encouraging it to utilize the 821 MHz allocation, where practicable.

The NLECTC pre-coordination database shall[39] be used by RPCs to review adjacent region's plans.

Electronic or hard copy approval signed by the adjacent region(s)' RPC chairman (where a region has formed) must accompany each region's plan.

ITEM 12.   A DETAILED DESCRIPTION OF HOW THE PLAN PUT SPECTRUM TO THE BEST POSSIBLE USE.

Summarize considerations that were taken in the initial allotment of channels and what considerations should be taken during system design and coordination/licensing to assure that the most efficient use of the spectrum is made.

ITEM 13.   A DETAILED DESCRIPTION OF THE FUTURE PLANNING PROCESS, INCLUDING BUT NOT LIMITED TO THE AMENDMENT PROCESS, MEETING ANNOUNCEMENTS AND MINUTES, DATABASE MAINTENANCE AND DISPUTE RESOLUTION.

Future Planning & Minutes

The RPC shall determine the frequency of meetings and include the schedule in the Bylaws. The RPC shall also define how and where future applications and/or license modifications will be filed. A list of publications and/or websites that will be used to announce the meetings shall be provided. The Bylaws should include a description of the process by which the plan can be amended. The RPC shall record the minutes of all meetings and shall keep them available for three years for review upon request by the FCC.

Database Maintenance[40]

RPCs shall use the NLECTC pre-coordination database, specifically designed for use in the 746-776/794-806 MHz public safety band. This database will contain frequency availability and pre-allotment. The Regional Committees shall use the NLECTC pre-coordination database to review pending and/or complete pre-allotments for the adjacent regions to assist in completing their respective plans.

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[39] See Footnote 2. A Petition for Reconsideration on mandatory use of the database has been filed by PSWN. The Implementation Subcommittee maintains its recommendation that the use of the NLECTC database be mandatory. Therefore, the language referring to use of the NLECTC database has been retained as mandatory. The language will be changed to reflect the FCC's decision on PSWN's Petition for Reconsideration, if necessary.

[40] *Ibid*.

The FCC's designated public safety frequency advisors will use the NLECTC pre-coordination database during the application process (pre-coordination). Frequency advisors, as well as RPCs, will be required to maintain the database as the applications are processed and granted by the Commission.

Dispute Resolution

RECOMMENDATION: The Subcommittee strongly recommends that the Dispute Resolution Process described in Appendix D be used as the initial methodology in all dispute resolution. For those disputes that cannot be resolved locally, the Implementation Subcommittee recommends that there be a 700 MHz National Planning Oversight Committee (NPOC) created to mediate and resolve disputes between regions such as disputes over allotments and disputes over assignments. The NPOC will entertain appeals of the decisions of the region's appeals subcommittee (see Appendix D). The NPOC would be comprised of members drawn from the Chairs of the 700 MHz RPCs as well as representatives from the FCC-certified public safety frequency advisory committees. The FCC remains the final authority in any and all dispute resolution.

ITEM 14.   A CERTIFICATION BY THE REGIONAL PLANNING CHAIRPERSON THAT ALL PLANNING COMMITTEE MEETINGS, INCLUDING SUBCOMMITTEE OR EXECUTIVE COMMITTEE MEETINGS WERE OPEN TO THE PUBLIC.

Included in the summary of the minutes of each meeting shall be a listing of the ways in which the meetings were announced to all members and all possible interested parties. Minutes should include lists of all members, participants, and observers attending the meeting.

Include a simple certification statement signed by Chairperson.