



## Region 47 - NPSPAC Regional Planning Committee

*Commonwealth of Puerto Rico*

*P.O. Box 3858, Bayamon Gardens Station, Bayamon, PR 00958*

Federal Communications Commission  
Office of the Secretary  
445 12th Street, SW  
Washington, DC 20554

Attention: Chief, Public Safety and Homeland Security Bureau

Subject: WTB Docket No. 02-378, Region 47 - 700 MHz Regional Plan

Dear Madam Secretary:

On behalf of Regional Planning Committee 47 ("Region 47"), I am pleased to submit the Plan<sup>1</sup> for the use of the 700 MHz public safety narrowband voice frequencies pursuant to the rules of Federal Communications Commission. The Region 47 Plan has been developed in conformance with the Second Report and Order<sup>2</sup> as well as the related and applicable Orders of the Commission. In addition, the table of 700 MHz channels<sup>3</sup> has been updated to include the new allotments as developed by the Computer Assisted Pre-coordination Resource and Database System ("CAPRAD")<sup>4</sup>.

Region 47 believes that this Plan sufficiently addresses each of the common elements required under the Commission's rules<sup>5</sup>. In the compilation of the Plan, Region 47 provided notice of all meetings, opportunities for comment, and how we reasonably considered the views expressed by participants. The Plan was coordinated with each of the neighboring Regional Planning Committees<sup>6</sup>. This Plan is representative of all public safety entities in Region 47 and the details of the Region's activities to meet the requirements of the Commission relative to Plan development are offered within the body of this document.

The Region requests the Commission's approval of this Plan as so licenses for critically needed land mobile radio systems in the 769-775 and 799-805 MHz bands supporting homeland security and public safety can be submitted.

Respectfully submitted,

*Ferdinand Cedeño*

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Ferdinand Cedeño, Chair  
Regional Planning Committee 47

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<sup>1</sup> See 47 CFR §90.527(a)(1)

<sup>2</sup> See FCC 07-132

<sup>3</sup> See 47 CFR §90.531(b)(6)

<sup>4</sup> See DA 07-4587

<sup>5</sup> See 47 CFR §90.527(a)

<sup>6</sup> See 47 CFR §90.527(a)(5)



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# **Region 47 – 700 MHz Regional Planning Committee**

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## **1. 700 MHz Regional Plan for Regional Planning Committee 47**

This document is the 769-775 and 799-805 MHz Plan for Regional Planning Committee 47 (Puerto Rico) describing how the General Use frequencies as defined in 47 CFR §90.531(b)(6) will be allocated and implemented in the Region. This section is provided in compliance with 47 CFR §90.527 (a)(1). Unless stated otherwise, any reference to “700 MHz” in this Plan means the 769-775 and 799-805 MHz frequencies established for public safety general use in 47 CFR 90.531(b)(6) and other subparts for which Regional Planning Committees have responsibility.

### **1.1 Regional Chair**

The Regional Chair of Region 47 is:

**Ferdinand Cedeño**

Executive Director Maritime Transportation Authority

PO Box 3858, Bayamon Gardens Station, Bayamon, PR 00958

**Phone:** 787-504-7110

**E-mail:** Ferdinand.Cedeno@gmail.com

### **1.2 RPC Membership**

Membership in the Region 47 Regional Planning Committee is open to any interested party. Committee Officer Offices, voting procedures, and membership attendance requirements are listed in the Region 47 Planning Committee bylaws. The Region’s membership information is contained in the Appendices to the Plan. Voting and operating procedures are described in the bylaws of this plan.

### **1.3 Plan Development and Regional Participation**

Region 47 developed the 700 MHz Plan through extensive island-wide participation as well as through coordination through its regional neighbor, US Virgin Islands (Region 48). The Regional Chair convened a meeting composed primarily of the Technical Committee and its members as well as himself and the Region’s Secretary to develop the Plan.

The committee responsible for Plan development held a series of meetings which showed progress was made relative to specific sections of the Plan. Progress reports were



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reviewed and analyzed through webinar sessions and face to face meetings. The work of the group resulted in the adoption of the Plan.

### **1.4 Committees' Structure and Responsibilities**

#### **A. Technical Committee**

The Technical Committee is charged with the responsibility to:

1. Schedule and hold annual reviews of the technical matters impacting the Region 47 Plan for 700 MHz
2. Review and approve/disapprove FCC applications for 700 MHz channels from within Region 47.
3. Review and approve/disapprove FCC applications for 700 MHz channels from Region 48's 700 MHz Planning Committee.

#### **B. Regulatory Committee**

The Regulatory Committee's responsibilities are:

1. Conduct annual reviews of the regulatory issues identified by the Commission and propose compliance revisions of the Region 47 Plan for 700 MHz.
2. Respond to any notices issued by the FCC impacting Regional Planning Committee 47.
3. Develop and E-File comments with the Commission per the Region's By-laws.

### **1.5 Major Elements of the Plan – from 47 CFR §90.527 (a)(2)**

The major elements of the Plan are those required to conform to the requirements of the Commission as contained in 47 CFR §90 Subpart R. Each of the elements as contained in the rules of the Commission is specifically notated in this Plan to facilitate regulatory review. Appendix I shows the Region's compliance with 47 CFR §90.527 (a) (2) by depicting the Plan "check-off" sheet provided by the NCC.

### **1.6 Opportunities for Participation in the Plan's Development - from 47 CFR §90.527 (a)(2)**

Region 47 encouraged the participation of all Part 90 licensees and others with an interest in the development of a Plan for 700 MHz and other issues related thereto.



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The region first convened during a meeting<sup>8</sup> on July 21, 2011. Active work on the Region 47 Plan was initiated following a meeting held on July, 2008. In this meeting, information on the strategies used in other regions was presented as well as a PowerPoint presentation documenting the Commission's requirements for Plan development as provided in 47 CFR §90.527. Subsequently, specific Plan development tasks were assigned to members for review and action. The subcommittees held additional meetings to further refine the provisions of the plan.

In addition to the meetings in July and September 2011, various Webinars and conference calls were held by specific Committees to resolve issues relative to the Plan. A draft of the Plan was provided to the membership for review thirty (30) days before a region-wide meeting permitting all members to digest the Plan and bring relevant comments and suggestions to the meeting in which it was adopted. The Regional Plan was finalized by the Region on September 15, 2011. The Plan was reviewed by the Technical Committee and revised to ensure compliance with actions of the Commission.

The minutes for meetings are contained in Appendix D.

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<sup>8</sup> Please see Meeting Notice DA 11-1191 issued by the Commission on 13 July 2011





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## **2. Region 47 Description**

The Commonwealth of Puerto Rico is home to 3.5 million people and is comprised of 78 municipalities. Municipalities are subdivided into barrios (districts), and those into sectors. Puerto Rico is a self-governing commonwealth in association with the United States and contains over 8,870 square kilometers.

The outer regions of the island are almost at sea level. Outside of the coastal regions of Puerto Rico, the terrain is mostly hills and mountains. The highest point is one of Puerto Rico's most popular attractions, El Yunque, at 1,34 km. Like many other Caribbean islands, Puerto Rico is crest of an extinct submarine volcano.



**Puerto Rico's Topographical Map**

There are seven main highways that run through the Commonwealth. These highways are 2, 3, 1, 22, 52, 53 and 66. The main concentration of highways runs through San Juan, the capital of Puerto Rico. See Figure above for Puerto Rico's Major Highways.

Many of the intersections of the main highways are placed in large cities. Highways 52 and 30 intersect at Caguas. Humacao is placed in the intersection of highway 53 and 30. Ponce has three main highways intersect in its city, Highways 52, 10 and 2. The Northeast region of Puerto Rico is the region with the most highways running through and around it given that it is the most populated region of the island.





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**Map of the Municipalities of Puerto Rico**

## **2.1 Notification Process**

The Chair of Region 47 has continued to keep the Chair of the adjoining region up-to-date with progress relative to the development of the 700 MHz Plan. All meetings were published in the Commission's Daily Digest. A comprehensive contact list was developed specifically for 700 MHz planning based on contact information listed on Part 90 public safety licenses located in the VHF, UHF, and 800 MHz frequency bands.

## **2.2 Future Meetings**

During the period following the Commission's approval of the Region 47 Plan, it is anticipated that meetings will be held with greater frequency as initial actions are taken relative to actions on applications for channel assignments.

There shall be no less than thirty (30) days of notice provided prior to a meeting with the sufficiency of notice measured by the posting of the meeting's information in the Daily Digest of the Commission.



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### **2.3 Operations of the Region**

Region 47 employs Robert's Rules of Order to conduct meetings. Voting member considerations are listed in the Region 47 By-Laws. The meetings are open to all interested persons and time for public input can be provided for anyone to express a viewpoint or to have input to the Regional Planning process.

A minimum of two (2) full committee meetings will be held every twelve months. The Region 47 Chair has the authority to call an additional meeting at a time when he/she deems necessary or when he/she deems it in the best interest of the Region to convene. For the convenience of Region 47 members, attempts will be made to coordinate 700 MHz meetings with Region 47 800 MHz meetings.

As provided in the bylaws, the Chair shall call a meeting of the Regional Planning Committee to elect a Chair, Vice Chair and Secretary.

A chronological list of meetings, summary of minutes, meeting announcements and agendas outlining Region 47 progress in 700 MHz development is located in Appendix D of this document.

### **2.4 Overview of public safety entities within the Region**

Region 47 supports a wide variety of federal, commonwealth, municipal and non-governmental resources. Included within the Region are a wide variety of municipal law enforcement agencies requiring **island wide** radio system support. These systems may also provide interoperability for federal or local government law enforcement agencies.

The Region also supports local law enforcement agencies that may range in size from municipality to the commonwealth's police.

One will also find a wide variety of fire and emergency medical resources within the Region ranging from municipal fire departments to volunteer fire and rescue organizations. Emergency medical services may be provided by commonwealth, municipal or volunteer fire departments as well as volunteer rescue squads and commercial ambulance services.

### **2.5 Solicitation of Comments and Process Used to Consider Plan Comments**

Input from affected public safety communications' professionals has been an important



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part of Plan development. The process began by convening the Region and soliciting comments from the membership. As progress drafts of the Regional Plan were developed, updated versions were also uploaded to CAPRAD.

Prior to the adoption of the Plan by the membership of Region 47, drafts were shared with Region 48's Chairperson with a request for comments and concurrence. To the extent that comments were received, necessary changes were made in the Plan prior to submission to the Commission.



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### **3. Regional Plan Administration and Frequency Coordination**

#### **3.1 General Description of Spectrum Allocation – from 47 CFR §90.527 (a)(3)**

A. Region 47 believes the Regional Plan is charged with providing sufficient spectrum to an applicant to support its request and operation. Therefore, the Region will consider the current spectral resources of the applicant as well as potential requirements of licensees within the applicant's area of operation.

The review will also consider:

- The issue of spectrum to be returned by the applicant (if applicable)
- The funding available to implement a system
- Proposed system diagram (if available)
- Proposed implementation schedule

To ensure that channels have been allocated appropriately with respect to geographical areas within Region 47, the CAPRAD table of assignments will be utilized as the initial baseline from which assignments are initiated. If necessary, the Region may augment the CAPRAD assignments if all frequency coordination procedures and requirements are met.

After the Region 47 Plan has been approved for a period of three years, no active application will be rejected solely due to interference that may be caused to geographic allocations in areas where there is no active intent to pursue licensing in the 700 MHz band. Secondly, the Region must protect adjacent and co-channel users in Region 48 from harmful interference as defined in the applicable rules of the Commission.

Upon FCC approval of this Plan, Region 47 will announce to the region that the initial window of 700 MHz public safety spectrum is available in the Region and that channels will be initially assigned on a geographical basis within phases, also known as “windows.” All available methods will be used to notify public safety entities of channel availability in the Region (see Section 2.1).

For the initial allocation of channels, Region 47 proposes a modified set of National



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Coordination Committee (NCC) Pre-Assignment Rules and Recommendations listed in Appendix F to the extent appropriate. However, if deemed necessary, the Region may modify the channel allocation in order to provide eligible agencies with the number of channels required to implement LMR systems.

- B. Applications for channels in Region 47 shall be submitted to the Chair of the RPC. He or she shall be responsible to comply with the provisions of 47 CFR §90.176 (c)–(h) relative to the notification of the adjacent region of applications for channels.
- C. Unless in conflict with Section A’s provisions, if any officer of Region 47 receives applications for channels he or she must forward the applications to the Chair for processing in accordance with the other provisions of this Plan.
- D. Applicants will email applications along with attachments to the Chairperson, Vice-Chair, the Secretary and the Technical Committee Chair of the RPC for review and approval. Upon approval by the committee applicants will forward the approved FCC 601, along with the Region’s approval letter, to an FCC certified coordinator. **Applicants are responsible for all frequency coordination costs which are paid directly to the coordinator of their choice.**

### **3.2 Application Requirements**

#### **3.2.1 Application Content Summary**

A complete application package must include the following items:

- A. Completed FCC 601 form(s)
- B. Completed supplemental application requirements including:
  - a. Manufacturer and model of transmitting antenna (or its equivalent)
  - b. Degrees of downtilt, if applicable
  - c. Orientation of the antenna, if other than omnidirectional
  - d. A written description of the service area and justification for any expansion beyond the applicant’s jurisdiction
  - e. Justification of any extension of the service area beyond the jurisdictional limits of the applicant





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- C. Signed Letter of Intent from an authorized representative of the applicant agreeing to implement system as proposed; conditioned on relinquishing any FCC license upon default of system construction.
- D. Project implementation schedule
- E. Coverage and interference-prediction analysis that are described in TIA TSB-88-C (or a subsequent later version), using Okumura-Hata-Davidson propagation modeling, relative to a suburban environment. The modeling is to be based on a 1 arc second terrain data. Land Use-Land Cover (LULC) losses are to be applied; however, the diffraction portion of the modeling, where it can serve to artificially limit the size of the contour, must be disabled. The Region 47 Committee will provide reference propagation plot based upon specific listed technical parameters (see Appendix K). Applicants will provide a propagation study using the provided parameters in Appendix K to show calibration with the Region's own modeling software.

### **3.2.2 Application Submission Format**

As stated in section 3.1-D, all materials provided as part of the application package must be submitted electronically. The Technical Committee Chair reserves the right to also request hardcopies of the application package.

### **3.2.3 Grounds for Dismissal of Application**

The Technical Committee has the right to request any essential missing information so applications can continue to undergo the evaluation process. The Chair of the Technical Committee shall notify the applicant via email if the application package does not meet the requirements stated in this Plan. Applications shall be dismissed and returned to the applicant if the required information is not provided within 60 calendar days of the request. The applicant will then have the option to complete and resubmit the application during the next filing window period.



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### **3.2.4 Appeal of Dismissal**

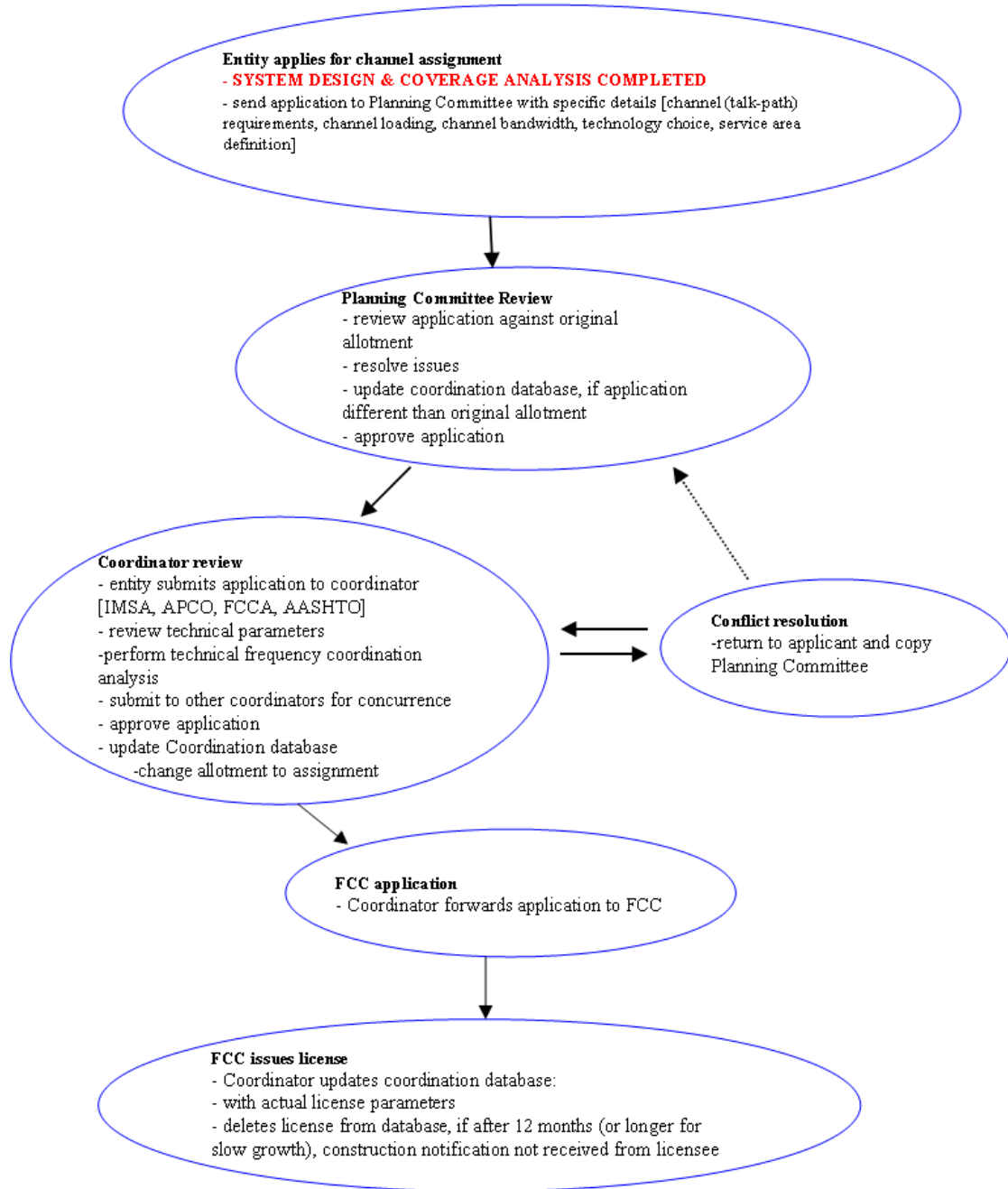
If an application is dismissed by the Technical Committee, the applicant has the right to appeal the decision with a written request for reconsideration. At that time, the Technical Committee Chair, or its designee will review the request and its supporting documentation in order to determine whether an application will be reconsidered for processing or affirm the original dismissal. Applications which are approved for processing are returned to their original place in the queue. On the other hand, applications whose dismissals are reaffirmed may appeal Region's decision to the FCC.



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## 3.3 Application Process

### COORDINATION FLOW CHART





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The applicant's current frequency holdings (if any) are reviewed by the Committee.

Next, the frequency pool is allotted, and interregional concurrence occurs as necessary. The Plan is then sent to the FCC for review and approval. Upon acceptance by the FCC, the RPC notifies the applicant of its channel allotment(s). The applicant shall file the station license(s) with its preferred frequency coordinator, who coordinates with the FCC.

Simultaneously, the applicant shall send a copy of its application to the RPC. Upon confirming that the application for license matches the application for channel allotment, the RPC shall submit a Regional Plan Control Number to the coordinator, and the Regional Plan, RPC, and CAPRAD databases are updated. Finally, the FCC grants the license(s) to the successful applicant.

### **3.3.1 Follow-up after Initial Approval**

The FCC allows the applicant/licensee up to five (5) years to implement the system. Should system implementation not begin (by, at minimum, an award of contract) within a two-year period, or if the projected channel loading is not attained in accordance with the slow-growth plan, the Region will petition the FCC to have the channels be returned for reallocation.

System implementation is monitored by the Region 47 Technical Subcommittee to determine if progress is being made. Monitoring of system implementation by the Region 47 Technical Subcommittee will take place at a minimum of six-month intervals until implementation is complete. If progress is being made, the system is ultimately implemented. If progress is not made, the applicant/licensee is warned of the potential consequences of its lack of progress.

The Region 47 Technical Subcommittee continues to monitor progress on the implementation of the system. If monitoring indicates that progress is still not being made, the applicant/licensee is notified of pending action to withdraw the channel allotment(s). The notified applicant/licensee can request an extension of time from the RPC to complete its slow-growth plan or can allow the application to be cancelled. If the applicant/licensee requests an extension, and the RPC agrees, a concurrence letter acknowledging the applicant's request will be produced by the RPC and sent to the FCC.

If the RPC grants an extension to the applicant/licensee, the system implementation monitoring process will continue. If the RPC does not grant an extension, the applicant/licensee and FCC will be notified. The notified applicant/licensee can appeal this action or allow the license to be withdrawn. If the allotted frequencies are withdrawn, they



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are added back into the frequency pool and the process begins a second iteration.

If the applicant/licensee appeals the RPC's decision, the FCC appeal process will ensue. If the FCC denies the appeal, the RPC and applicant/licensee will be notified. If the FCC grants the appeal with channel-allotment changes, the frequency pool is allotted. If there is no channel-allotment change, the system implementation is monitored by the RPC.

### **3.4 Technical Evaluation of Applications**

Complete application packages shall undergo a technical review according to the procedures described in this section.

In order for an application to begin the technical evaluation process, it must:

- A. Contain the required technical parameters
- B. Be consistent with the CAPRAD 700 MHz National pre-allotment channel pool for Region 47
- C. Protect licensed assignments and unlicensed allotments under past filing windows

### **3.5 Coordination with Region 48**

47 CFR 90.527 (a)(5): Each application will be checked by the RPC 47 Technical Subcommittee to ensure that its acceptance would not cause harmful interference to existing licensed systems and allotments.

Each application must be consistent with the CAPRAD 700 MHz National pre-allotment channel pool for Region 47. Any application packages that do not provide the appropriate pool protection as required will be returned to the applicant, with information regarding other impacting applications. The applicant will be allowed thirty (30) calendar days to respond.



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### **3.6 Use of the CAPRAD Pre-Assignment Table**

CAPRAD was established to ensure an appropriate distribution of channels on the basis of geographic population. Additionally, the channels were assigned to minimize the potential of co-channel and adjacent channel interference. However, CAPRAD did not differentiate the channel assignments based upon geographical areas already enjoying advanced digital trunked radio services in the 800 MHz band and contrast those assignments with users in highly populated areas utilizing older conventional technologies. It is often the users of older conventional systems that may have the greatest need for spectrum to construct modern digital trunked radio systems. CAPRAD's use of geographical separations of channels also does not consider the actual system technical parameters or service area. As an example, the listing of a specific channel to a municipal geographic area does not consider that the channels may in actuality be used by a district in that municipality with a significantly smaller service area. Additionally CAPRAD does not consider RF path loss between reuse areas (i.e. terrain obstacles). In both of these examples, the reuse criteria of CAPRAD can be significantly reduced. This highlights the Region 47 position that CAPRAD is a starting point, not an end point, in channel allocations.

It is important to note that the Region 47 planning Committee allocates and coordinates channels based on geographic assignment, not to specific political entities. For example, if a CAPRAD assignment is to (hypothetical) The San Juan Municipality, any eligible user within San Juan may apply for use of the channel as is consistent with 47 CFR § 90 Subpart R.

If an eligible user in Region 47 requires more channels than are available within CAPRAD and the background information provided by the user justifies the channels, the Region will strive to accommodate the applicant's requirements if the applicant provides documentation to support the need for additional channels.

The Region supports a "technology-neutral" strategy that permits an applicant to specify the spectral requirements of the proposed system which may deviate from the CAPRAD table of assignments.

To minimize the likelihood of "orphan" channels, the Region will permit the appropriate exchange of CAPRAD-assigned channels between eligible users desiring 12.5 KHz assignments as consistent with Section 6.3 of this Plan.

Region 47 will assign channels pursuant to the Commission's Second Report and Order to





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Docket WT 96-86 released August 10, 2007 as depicted below.

1

<u><b>Revised 700 MHz Band Plan for Public Safety Services</b></u>															
763		769		775		793		799		805					
<i>Public Safety Allocation</i>								<i>Public Safety Allocation</i>							
Broadband		G B	Narrowband		<i>Commercial Allocation</i>				Broadband		G B	Narrowband			
CH. 62		CH. 63		CH. 64		CH. 65		CH. 66		CH. 67		CH. 68		CH. 69	
764		770		776		782		788		794		800		806	

## 3.7 Allocation Disputes

An eligible licensee may protest a proposed system within 30 calendar days of the Window 1 notification. CAPRAD geographic area allocations will only be considered protected for a period of three years from the date the FCC approved the Region 47 Plan, after which time only FCC licensed allocations receive protection. Protests will only be considered if the allocation does not conform to the Region 47 Plan or the objecting agency or the Chair can show harmful interference is likely based on the information submitted by the agency requesting the new allocation. The parties involved must resolve the allocation dispute pursuant to the Plan and notify the Region Chair of such resolution within 30 calendar days. If the parties involved cannot resolve the allocation dispute within that timeframe, then a special full Committee meeting will be scheduled to consider and vote on the protest. If approved, the application will be submitted through the CAPRAD database to the applicant's chosen FCC-certified frequency coordinator for processing. If not approved, the objecting agency has the right to seek arbitration with the FCC.

## 3.8 Campus Type System

With the implementation of 700 MHz public safety spectrum throughout Region 47, there may be opportunities for increased channel reuse when developing radio systems for campus type operation such as hospitals, stadiums, malls, or other places of public



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gathering, universities, transit systems, and ports. Since these channels have been designated in jurisdictional pool allotments with proper designations, they do not receive the benefits of wide area channels in that they are not cleared for usage over a wide area. In many instances, facilities require a smaller or more specific geographical coverage area than assumed in the initial channel packing plan and may be able to be reused more efficiently. These campus type systems also, in many cases, require in-building or confined space/tunnel radio coverage or communications along a linear pathway, such as a maintenance or right of way. Public safety channels can be allotted to this type of operation in a region. In order to facilitate this effective method of system implementation, channels have been identified in certain areas of Region 47 that may be utilized in a smaller service area. These channels may not be eligible to be utilized throughout the jurisdiction to which they are allotted and the following criteria must be adhered to when requesting channels from Region 47 for operations of this type:

- a. The 40dBu F(50,50) service contour<sup>9</sup> of the proposed system must not exceed an area more than 3 miles from the proposed transmitter site. Reduced external antenna height, along with reduced effective radiated power (ERP), directional antennae, distributed antenna systems, and radiating "leaky coax," are all tools that should be utilized in the development of these type systems.
- b. Region 47 will ensure that the development of these types of systems will not interfere with co-channel or adjacent channel users within Region 47 or Region 48. The Chair of the Region or its Technical subcommittee has the authority to request engineering studies from the applicant that indicates there will be no harmful interference to any co-channel or adjacent channel existing user prior to application approval.
- c. For 12.5/25 kHz co-channel assignments, the 40dBu F(50,50) service contour of the proposed stations will be allowed to extend beyond the transmitter site for a

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<sup>9</sup> Contours are calculated using methods described in TIA TSB-88B (or a subsequent later version), by using Okumura-Hata-Davidson propagation modeling, relative to suburban environment. The modeling is to be based on a 1 arc second terrain data. Land Use-Land Cover (LULC) losses are to be applied; however the diffraction portion of the modeling, where it can serve to artificially limit the size of the contour, must be disabled.



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distance no greater than 3 miles. An adjacent/alternate 12.5/25 kHz channel shall be allowed to have its 60 dB $\mu$  (50, 50) contour touch, but not overlap the 40dB $\mu$  service (50, 50) contour of an adjacent/alternate system being protected. Evaluations should be made in both directions to ensure compliance. The approval of systems utilizing jurisdictional allotment channels labeled "Campus" is subject to approval of the Region 47 700 MHz regional planning committee. They are the final authority on parameters associated with "campus" type operations.



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### **3.9 Channel Assignments**

Region 47 requires that all licensees under its jurisdiction commence operation of systems as required by 47 CFR §90.551. In addition to the requirements stated in section 3.2, the Region 47 Plan requires that, prior to application submission, the applicant must prepare and submit a needs assessment study documenting the need for channels in the 700 MHz band and/or prove the issuance of a Request for Proposals (RFP) or other procurement document designed to acquire a 700 MHz land mobile radio system

Pursuant to 47 CFR § 90.551 (Construction requirements), each station authorized to operate in the 769-775 MHz and 799-805 MHz frequency bands must be constructed and placed into operation within 12 months from the date of grant of the authorization. However, applicants may request a slow growth, up to but not exceeding 5 years, pursuant to § 90.155(b).

If the Licensee does not construct and implement their 700 MHz radio system in accordance with the plan, Region 47 has the right to return the channels to the general allotment pool for reassignment to other agencies/licensees. Notwithstanding the preceding provisions, the recommendation of channel use shall not be rescinded until the licensee has been notified of such intent to withdraw Regional support for use of channels ninety (90) days prior to such action. The licensee shall be afforded an opportunity to request in writing an extension of time to maintain Regional support related to use of the channels. Such request shall detail the justifications for maintaining the channels and indicate when such channels shall be placed on the air for the purposes of testing or operations.

Once notified by the Region of its intent to rescind support for use of the channels, the burden is placed upon the licensee to request in writing an extension of time. If the licensee does not file such an extension within ninety (90) days of notice issuance or if the request of the licensee is determined by the Region to be without merit, the Region will support return of channels to the general pool at the end of the ninety (90) day notice period.



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### **3.10 Per FCC Part 90.527 (a)(6) - Maximize Use of Spectrum**

The Region supports the need for public safety interoperability as delineated in the APCO Project 25 (P25) standard.

P25 Frequency Division Multiple Access (FDMA) systems utilize “one-half” blocks or 12.5 KHz channels as opposed to the 25 KHz “full” blocks of channels contained within the CAPRAD assignments. The 12.5 kHz Time Division Multiple Access (TDMA) systems employ two 6.25 KHz equivalent talk paths yield 6.25 KHz equivalency. To avoid the creation of orphan channels and to maximize the spectrum available to Region 47 users, the Region requests the Technical Committee to assign channels based upon the applicant’s proposed technology. Moreover, the Region strongly advocates a vendor neutral philosophy.

Applicants considering the use of 25 kHz spaced channels with four time slot TDMA may request that the full allocation be granted, however the number of channels granted will be based upon the number of justified talk paths not RF channels. Thus, a 12.5 kHz channel is assumed to provide 2 talk paths and a 25 kHz channel 4 talk paths.

As indicated in the Region’s Plan, CAPRAD will be the initial basis upon which channels are assigned. When only two of the four consecutive channels in CAPRAD are required by an applicant, the Technical Committee will assign the remaining channels to another applicant provided that the Commission’s rules relative to co-channel and adjacent channel interference are observed. Similarly, when four (4) consecutive 6.25 KHz equivalent channels are requested by an applicant, the Technical Committee will utilize the full CAPRAD assignment pursuant to this Plan.

In the event that all potential applicants within a geographical area plan to utilize a P25 technology or waive claim to the assigned channels during the first assignment window, the Technical Committee may assign the channels to another geographical area or applicant.

### **3.11 Low Power Channels**

The Plan provides guidelines relative to the use of the low power 700 MHz channels under the authority of the Regional Planning Committee (RPC) as defined by 47 CFR §90.531(b)(3).



## **Region 47 – 700 MHz Regional Planning Committee**

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### **Eligibility -**

The following entities are eligible to use low-power channels under the control of the Regional Planning Committee pursuant to 47 CFR §90.523(a) and (b).

*(a) State or local government entities.*

Any territory, possession, state, city, municipality, town, or similar State or local governmental entity is eligible to hold authorizations in the 769–775 MHz and 799–805 MHz frequency bands.

*(b) Nongovernmental organizations.*

A nongovernmental organization (NGO) that provides services, the sole or principal purpose of which is to protect the safety of life, health, or property, is eligible to hold an authorization for a system operating in the 769–775 MHz and 799–805 MHz frequency bands for transmission or reception of communications essential to providing such services if (and only for so long as) the NGO applicant/licensee:

- (1) Has the ongoing support (to operate such system) of a state or local governmental entity whose mission is the oversight of or provision of services, the sole or principal purpose of which is to protect the safety of life, health, or property;
- (2) Operates such authorized system solely for transmission of communication essential to providing services the sole or principal purpose of which is to protect the safety of life, health, or property; and
- (3) All applications submitted by NGOs must be accompanied by a new, written certification of support (for the NGO applicant to operate the applied for system) by the state or local governmental entity referenced in paragraph (b)(1) of this section.

### **Low-power 700 MHz Channel Use**

Frequencies will be used in a simplex or repeater mode as specified within this provision of the Region's Plan for 700 MHz. The Plan will combine two channels as contained in 47 CFR §90.531(b)(3) to yield a 12.5 KHz simplex operating frequency. In the repeater mode, four 700 MHz channels shall be combined to yield a 12.5 KHz transmit and 12.5 KHz receive frequency.





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### **Use within the Region**

Low-power 700 MHz frequencies are limited to transmissions with the effective radiated power (ERP) allowed per FCC Part 90.531. These frequencies can be used in one of two methodologies, direct radio-to-radio (simplex operation) or other low power technology providing a repeater capability. The use of these frequencies for official public safety or public service communications is permitted by a single public safety agency or prior to the actual invocation of interoperable communications between two or more public safety agencies.

Communications of a personal non-official purpose are prohibited.

### **Assignment of Frequencies**

First responders have broad discretion in the use of these channels. However, if an incident is of sufficient scale to invoke the National Incident Management System (NIMS), the Incident Commander shall determine which low-power channels shall be used for first responders as well as the use of simplex and/or repeater technology.

### **Modulation**

Pursuant to 47 CFR §90.525(a), operation on these channels may utilize digital or analog modulation. For the purpose of this Plan, analog operations will be utilized. Analog operations will utilize the 11K0F3E emission type.

### **Programming of Frequencies**

If the eligible applicant's mobiles and/or portables have sufficient capacity, they are encouraged to program related frequencies in their units.

### **Service Assignments**

A table of repeater and direct or simplex assignments is found below and on the following pages. These assignments notate specific frequencies reserved for EMS, fire, and law enforcement users. For all other users, Generic Public Safety/Public Service frequencies exist that can be used by any eligible licensee as defined in 47 CFR §90.523.



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### **Repeater/Incident Area Network Operation**

From the Department of Homeland Security SAFECOM Statement of Requirements<sup>10</sup>, *An incident area network (IAN) is a network created for a specific incident. This network is temporary in nature.* For the IAN or other repeater operation, the Region will follow the national deployment model; the lower frequency shall be used for the Repeater transmitter frequency while the upper frequency is employed for mobile/portable transmissions. Repeater operation is identified by the “2” (2-channel) behind the service name, e.g. “7TAC21 meaning 700 MHz (7) Tactical (TAC) Frequency with Repeater (2) frequency 1 (1).

Frequency Name	Repeater TX	Repeater RX	Applicable Service
7TAC21	Channels 1-2	Channels 961-962	Generic Public Safety/Service
7TAC22	Channels 3-4	Channels 963-964	Generic Public Safety/Service
7TAC23	Channels 957-958	Channels 1917-1918	Generic Public Safety/Service
7FIRE21	Channels 5-6	Channels 965-966	Fire
7FIRE22	Channels 7-8	Channels 967-968	Fire
7MED21	Channels 949-950	Channels 1909-1910	EMS
7MED22	Channels 951-952	Channels 1911-1912	EMS
7LAW21	Channels 953-954	Channels 1913-1914	Law Enforcement
7LAW22	Channels 955-956	Channels 1915-1916	Law Enforcement
7TAC21	Channels 961-962	Channels 1-2	Generic Public Safety/Service
7TAC22	Channels 963-964	Channels 3-4	Generic Public Safety/Service

<sup>10</sup> SAFECOM Statement of Requirements, March 10, 2004, page 6.



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7TAC23	Channels 1917-1918	Channels 957-958	Generic Public Safety/Service
7FIRE21	Channels 965-966	Channels 5-6	Fire (1)
7FIRE22	Channels 967-968	Channels 7-8	Fire (1)
7MED21	Channels 1909-1910	Channels 949-950	EMS (2)
7MED22	Channels 1911-1912	Channels 951-952	EMS (2)
7LAW21	Channels 1913-1914	Channels 953-954	Law Enforcement (3)
7LAW22	Channels 1915-1916	Channels 955-956	Law Enforcement (3)

- (1) These frequencies only programmed into mobile and portable radios used in the fire radio service.
- (2) These frequencies only programmed into mobile and portable radios used in the EMS radio service.
- (3) These frequencies only programmed into mobile and portable radios used in the law enforcement radio service.

### **Direct Radio-to Radio (Simplex Operation)**

Simplex operation is identified by the “1” (1-channel) behind the service name, e.g. “7TAC11 meaning 700 MHz (7) Tactical (TAC) Frequency with “Direct” or simplex communications (1) on frequency 1 (1).

Use (Notes)	Channels	Name
Generic Public Safety/Service	Channels 1-2	7TAC11D
Generic Public Safety/Service	Channels 3-4	7TAC12D
Generic Public Safety/Service	Channels 961-962	7TAC13D
Generic Public Safety/Service	Channels 963-964	7TAC14D
Generic Public Safety/Service	Channels 957-958	7TAC15D



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Generic Public Safety/Service	Channels 1917-1918	7TAC16D
Fire Incident Management (1)	Channels 5-6	7FIRE11D
Fire Incident Management (1)	Channels 7-8	7FIRE12D
Fire Incident Management (1)	Channels 965-966	7FIRE13D
Fire Incident Management (1)	Channels 967-968	7FIRE14D
EMS (2)	Channels 949-950	7MED11D
EMS (2)	Channels 951-952	7MED12D
EMS (2)	Channels 1909-1910	7MED13D
EMS (2)	Channels 1911-1912	7MED14D
Law Enforcement (3)	Channels 953-954	7LAW11D
Law Enforcement (3)	Channels 955-956	7LAW12D
Law Enforcement (3)	Channels 1913-1914	7LAW13D
Law Enforcement (3)	Channels 1915-1916	7LAW14D

- (1) These frequencies only programmed into mobile and portable radios used in the fire radio service.
- (2) These frequencies only programmed into mobile and portable radios used in the EMS radio service.
- (3) These frequencies only programmed into mobile and portable radios used in the law enforcement radio service.

### 3.12 Dispute Resolution - Intra-Regional

In the event an agency disputes the implementation of this plan or the Federal Communications Commission approval of this plan or parts of this plan, the disputing agency representative must notify the Chair of the Region in writing. This section does not apply to protests over new spectrum allocations. The Chair will attempt to resolve



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the dispute on an informal basis. If the Chair is not successful in resolving the dispute, he/she will apply the methodology as outlined in Appendix L.

### **3.13 Per FCC Part 90.545 - TV/DTV Stations**

Public safety stations in the Commonwealth of Puerto Rico will not be required to protect Co and Adj. channel TV/DTV stations on TV channels 62, 63, 64, 65, 67, 68 and 69. Moreover, licensees within Region 47 will begin operation on or after January 2012



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### **4. Process for Handling Unformed Regions**

As previously stated, Region 48 is the only adjacent region to Region 47.

Region 47 has determined that Region 48 has not yet officially convened. However Region 47 will utilize the pre-allotment in CAPRAD to protect Region 48's geographic allotments.

Furthermore, Region 47 shall, as a courtesy, submit a copy of its regional plan to Region 48's representative to seek its concurrence.



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### **5. Coordination with Adjacent Region – Region 48**

The Region adjacent to Region 47 is listed below:

#### **Region 48 - US Virgin Islands**

POC: Angel Turnbull

Phone: 340-774-1013

Fax: 340-774-1490

Email: [angel.turnbull@bit.vi.gov](mailto:angel.turnbull@bit.vi.gov)





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the date of this plan's ratification) APPROVAL LETTER



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### **6. System Design/Efficiency Requirements**

#### **6.1 Interference Protection**

Applicants are expected to design their systems for maximum signal levels within their coverage area and minimum levels in the coverage area of other co-channel users. Quality system engineering, the use of directional antennae, and the advocacy of multi-agency/multi-discipline systems that promote interoperability should be employed by applicants to accomplish this goal.

The Region notes the extensive use of mutual aid agreements by jurisdictions within RPC47 and will accommodate the requests of applicants for wider coverage areas when appropriate provided that any extension does not result in harmful co-channel or adjacent channel interference. In extraordinary circumstances impacted by the need to provide wider areas of coverage to meet the potential of national, regional emergencies, or mutual aid agreements, the Region may also permit the coverage area to extend beyond the normal limits reflected in the paragraphs above provided that such extension does not cause harmful co-channel or adjacent channel interference to any licensee or potential licensee employing a channel in an identified geographical assignment within the Region 47 Plan. The Region will not permit such a level of extraordinary coverage into its adjacent region without the expressed and written approval of Region 48

#### **6.2 Spectrum Efficiency Standards**

Initial allotments will be made on the basis of the 25 kHz channel blocks incorporated in CAPRAD and then modified as consistent with this Plan to provide 12.5 or 25 KHz blocks of channels.

It is the eventual goal of the FCC and the public safety community for radio equipment to meet the requirement of one voice path per 6.25 KHz of spectrum. The Region has weighted its award criteria to jurisdictions employing spectrally efficient radios as noted in the Plan. An applicant may request by waiver allocations based on a 12.5 kHz standard upon showing of good cause and a firm migration path within 5 years to 6.25 kHz efficiency. When applying for channels within Region 47, the applicants should acknowledge the deadline for converting all equipment to 6.25 kHz or 6.25 kHz equivalent technology is 12/31/2014 except as provided by the Commission.



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In situations where a licensee builds to an efficiency standard under the Commissions blanket waiver permitting one talk path in 12.5 kHz of spectrum, and the Region 47 Committee allots a specific number of channels based upon loading in the 12.5 kHz efficiency standard, upon conversion to the Commission required 6.25 kHz talk path efficiency standard, the licensee must justify continued license for the amount of spectrum originally allotted. The Region 47 Committee may consider a take back of spectrum if the licensee cannot justify loading of the system with a 6.25 kHz efficiency standard.

For narrowband mobile data requests, one mobile data channel will consist of two (2) 6.25 KHz channels resulting in one (1) 12.5 KHz channel. Narrowband 6.25 KHz channels can be aggregated for data use to a maximum bandwidth of 25 KHz.

As 6.25 KHz migration evolves, an applicant whose request creates any "orphaned" 6.25 KHz channels should realize that these channels will be allocated to nearby agencies requesting channels pursuant to Section 6.3 of the Plan to maintain consistent groupings and the general utilization of 12.5 or 25 KHz blocks within the Region.

In compliance with 47 CFR §90.527 (a)(6), Region 47 encourages small agencies to partner with other agencies in multi-agency or regional systems as they promote spectrum efficiency and both small and large agency capacity needs can be met. Loading criteria can also be achieved in multi-agency systems that will allow greater throughput for all agencies involved than that which could be achieved individually.

The Region 47 Committee will utilized a loading factor of 100 units per voice path for the first 10 voice paths, and 150 units per channel for any additional voice paths, to determine the maximum number of channels allotted to a system. Data usage of narrowband channels will require 19,200 kbps per 25 kHz of spectrum.

### **6.3 Orphaned Channels**

The narrowband pool allotments within Region 47 will have a channel bandwidth of 12.5 and 25 kHz as required by the applicant. These 12.5 and 25 kHz allotments have been characterized as "technology neutral" and flexible enough to accommodate multiple technologies utilizing multiple bandwidths.



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An orphaned channel may be used at another location within or proximate to the geographical area where it was originally approved, provided that it meets co-channel and adjacent channel protection (ACP) interference criteria in 47 CFR §90.543.

If the "orphaned channel" remainder does not meet co-channel and adjacent channel interference criteria by moving it within the "geographic area" as listed above, and it is determined by the region that the "orphaned channel" cannot be utilized in the region, Region 47 will submit a plan amendment to the FCC to repack the channel to a location where its potential use will maintain maximum spectral efficiency. This FCC plan amendment will require affected region concurrence.

When in the best interest of public safety communications and efficient spectrum use within the Region, the Region 47 Regional Planning Committee shall have the authority to move orphaned channel allotments and/or co-/adjacent-channel allotments affected by the movement of orphaned channels. This is to retain spectrum efficiency and/or minimize co-channel or adjacent channel interference between existing allotments within the region utilizing disparate bandwidths and technologies.



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### **7. Interoperability Channels**

There are many public safety and homeland security agencies, full-time and volunteer, operating throughout Region 47. The Region adjoins Region 48, which contains many first responder agencies. The need for interoperability is critical and Region 47 encourages support for Interoperability Calling and Tactical Channels in all relevant frequency bands.

#### **7.1 Selection of Radios and Programming of Interoperability Channels**

As required by 47 CFR § 90.547 (Narrowband Interoperability channel capability requirement) except as noted in Subpart R, mobile and portable transmitters operating on narrowband channels in the 769-775 MHz and 799-805 MHz frequency bands must be capable of operating on all of the designated nationwide narrowband Interoperability channels pursuant to the standards specified in 47 CFR§ 90.548 .

#### **7.2 Tactical Channels**

At this time, Region 47 will not set aside additional channels for interoperability use within the region other than as stated in the Plan. It is anticipated the FCC designated interoperability channels will be sufficient to provide interoperability (voice and data) within Region 47.

All mobile and portable units operating under this Plan and utilizing 700 MHz channels must be programmed with the minimum number of channels called for either in NCC guidelines or as the relevant Statewide Interoperability Executive Committee specifies. The channel display in these radios will be in accordance with the NCC guidelines that have common alphanumeric nomenclature to avoid any misinterpretation of use within Region 47. PREMA is the final authority on the interpretation of the distribution of the 700 MHz interoperability channels.

#### **7.3 Deployable Systems**

In this Plan, Region 47 supports use of deployable systems, both conventional and trunked. Deployable systems are prepackaged systems that can deploy by ground or air to an incident to provide additional coverage and capacity on designated 700 MHz interoperability channels and/or agency specific General Use Channels. This will minimize the expense of installing extensive fixed infrastructure in areas while still



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providing mission critical functionalities as the Region recognizes the difficulty of providing complete coverage in all areas due to financial, demographic, and geographical constraints.

Agencies should have conventional deployable systems capable of being operated on any of the FCC designated/NCC recommended interoperability tactical channels. The agencies that are part of a multi-agency trunked system and commonly provide mutual aid to each other are encouraged to have trunked deployable systems that operate on the tactical channels designated by the FCC for this use. PREMA will develop the operational details for deploying these systems.

It is expected that the tactical channels set aside for trunked operation will be heavily used by deployable systems. Therefore, the tactical channels cannot be assigned to augment general use trunked systems.

### **7.4 Monitoring of Interoperability 700 MHz Calling and Tactical Channels**

The vast majority of land mobile radio systems operating on channels above 769 MHz will be in the older 800 MHz band. For the immediate future, Region 47 believes that it is appropriate for any new licensees using 700 MHz frequencies to monitor and have access to the current channels identification by the National Public Safety Planning Advisory Committee (NPSPAC) in the 800 MHz band.

Accordingly and until amended by the Region or superseded by order of the Commission, Region 47 may require applicants to install fixed network transceivers capable of monitoring the NPSPAC 800 MHz calling and four (4) tactical channels. Applicants may utilize a central agency to monitor the NPSPAC calling channel on their behalf.

Notwithstanding the other provisions of this section of the Plan, Region 47 may supplement the four (4) traditional NPSPAC tactical channels in 800 MHz with additional tactical channels in the 700 MHz band as provided by the Commission PREMA.

### **7.5 Interoperability with Federal Government**

First responders within Region 47 may also interoperate with first responders and Homeland Security officials during a disaster or related event.



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### **8. Future Planning – from FCC 90.531 (a) (7)**

The initial process of assignments will be known as Window One. In this window, the CAPRAD pre-coordination database will be employed as the initial basis of channel allotments for geographical areas within Region 47, including the independent cities using criteria such as current population, 2000 Census data, height above average terrain (HAAT), and public safety use curves generated by the Public Safety Wireless Advisory Committee (PSWAC) to provide spectrally efficient frequency allotments.

In Window One, all channels identified in this Plan will be available to applicants operating in the geographical areas as found in Appendix G. In addition, channels may be provided to an applicant pursuant to the provisions of this Plan as found in Section 6.3 of the document.

Applications for channels shall be submitted to the Technical Committee and reviewed by the Regional Committee for vote at the next scheduled meeting.

The initial window will be open from time of Commission approval of the Plan and further from that date, for a period of three (3) years. Three (3) years after the approval of the Plan by the Commission, Window One will close.

#### **8.1 Windows of Future Channel Assignments**

In the future, Region 47 will issue channels in 700 MHz under a continual process in which there will be a second filing window for applicants. This window for applications will be known as Window Two and will become effective upon the expiration of Window One.

When Window Two opens in the future, any channel in any geographical area not assigned to a licensee becomes open and available to any other applicant provided that no harmful co-channel and/or adjacent channel user is created through a reassignment of the channel, subject to overall regional planning committee review. As an integral part of the Plan, any orphan channels will be identified and reassigned pursuant to the provision of Section 6.3 of this Plan.

#### **8.2 Review of the Plan's Effectiveness**

As a standing agenda item for every meeting of Region 47, the Chair of the Technical Committee shall provide a report to the membership detailing the use of the spectrum and





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any administrative or operational issues arising from this Plan. In addition, the meeting Chair shall invite comments from members and any other persons in attendance at meetings relative to the effectiveness of the Plan.

At any time in which the Region Chair or the Chair of the Technical Committee has reason to believe that a provision of the Plan is adversely affecting public safety communications within Region 47, the Chair or Vice Chair operating in their absence has an affirmative responsibility to report the issues to the appropriate Committee for immediate attention.

Upon review of the reported conflict no later than sixty (60) days after the initial allegation; the appropriate Chair shall report the Committee's findings to the Region 47 Chair. The Region 47 Chair shall review the findings of the Committee reviewing the allegation. Depending upon the findings of the Chair of Region 47, one of three possible outcomes will be initiated.

- A. Allegation Unfounded – No further action is Required. The person reporting the alleged issue shall be informed of the Region's decision.
- B. Allegation Founded – Immediate Action not Required. When there is an affirmative finding of a problem with the Region's Plan and the matter can be appropriately deferred until placed on the agenda of the next meeting, the deferral of action is appropriate.
- C. Allegation Founded – Immediate Action Required. When the Chair of Region 47 finds that a provision of the Plan is causing or may cause adverse impact to an applicant or potential applicant, the Chair may take executive action and grant relief by temporarily suspending a provision of this Plan until a Regional Meeting can be called. In the event that executive action is taken and a provision of this Plan is suspended, the effective period of suspension shall not extend beyond sixty (60) days unless ratified by the Region at a meeting called in response to the Chair's findings and executive action.

### **8.3 Inter-Regional Dispute Resolution Process**

In the event that a dispute arises between Region 47 and the adjacent Region regarding spectrum allocations or implementation that cannot be resolved within 60 days, the



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parties to the dispute will request a hearing by the National Regional Planning Oversight Committee. Additional details are located in Appendix L.

### **8.4 Modifications to the Plan – from FCC Part 90.527 (b)**

In recognition that there will be amendments made to the Plan, the bylaws of the Region 47 700 MHz Planning Committee incorporate provisions permitting the amendments as may be necessary.

The Region 47 Plan will be modified when required by submitting a written request, signed by the regional planning committee, to the Chief, Public Safety and Homeland Security Bureau. The request will contain the full text of the modification, and certify that successful coordination of the modification with its adjacent region has occurred.



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**9. Certification – from FCC Part 90.531 (a)(8)**

Pursuant to the provisions of 47 FCC 90.531 (a)(8), I hereby certify that all planning committee meetings, including subcommittee or executive committee meetings were open to the public. A summary of the deliberations of the Committee pursuant to adopting this Plan can be found in Appendix D, in the minutes of the Regional Planning meeting.

*Ferdinand Cedeño*  
Ferdinand Cedeño,  
Chair, Region 47

December 30, 2011  
Date



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## **APPENDICES**



# Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

## Appendix A – Bylaws of Region 47

### THE BYLAWS OF REGION 47 700 MHz REGIONAL PLANNING COMMITTEE Adopted – July 21, 2011

#### ARTICLE 1 NAME & PURPOSE

- 1.1 Name and purpose:** The name of this Region shall be Region 47 and the Committee shall be known as *“The Region 47 – 700 MHz Regional Planning Committee”*. Its primary purpose is to foster cooperation, planning, development of regional plans and the implementation of these plans in the 700 MHz Public Safety Band.

#### ARTICLE II MEMBERS

For purposes of this Article, the term “member,” unless otherwise specified, refers to both voting and non-voting members.

- 2.1 Number, Election and Qualification:** The Regional Committee shall have two classes of members, “voting members” and “non-voting members.” New members may be added at annual, special, or regular meetings.
- A. Voting Members:** Voting members shall consist of one representative from any single agency engaged in public safety within Region 47, eligible to hold a license under 47 FCC 90.20, or FCC 90.523. All State Agencies and all Political Subdivisions shall be allowed no more than one vote. In voting on any issue the individual must identify themselves and the Agency or Political Subdivisions which they represent. Voting members may not vote on issues involving their entity.
- B. Non-Voting Members:** Non-voting members are all others interested in furthering the goals of public safety communications.
- 2.2 Tenure:** In general, each member shall hold MEMBERSHIP from the date of



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acceptance until resignation or removal.

- 2.3 Powers and Rights:** In addition to such powers and rights as are vested in them by law, or these bylaws, the members shall have such other powers and rights as the membership may determine.
- 2.4 Suspension and Removal:** A Member may be suspended or removed with cause by vote of a majority of members after reasonable notice and opportunity to be heard. Failure to attend 50% of meetings held in a calendar year shall be a specific cause for removal from the membership.
- 2.5 Resignation:** A member may resign by delivering written resignation to the Chair, vice-Chair, and the secretary/treasurer of the Regional Committee or to a meeting of the members.
- 2.6 Annual Meetings:** The annual meeting of the members shall be held at a location to be determined, each year after the adoption date of this document, within one month of the anniversary date. If an annual meeting is not held as herein provided, a special meeting of the members may be held in place thereof with the same force and effect as the annual meeting, and in such case all references in these bylaws, except in this Section 2.6, to the annual meeting of the members shall be deemed to refer to such special meeting. Any such special meeting shall be called and notice shall be given as provided in Section 2.7 and 2.8.
- 2.7 Special Meetings:** Special meetings of the members may be held at any time and at any place within the Regional Committee area. Special meetings of the members may be called by the Chair or by the vice-Chair, or in case of death, absence, incapacity, by any other officer or, upon written application of two or more members.
- 2.8 Call and Notice:**
- A. Annual meetings: Thirty (30) day notice of the time and place of all meetings shall be given to each member. Such notice need not specify the purposes of a meeting, unless otherwise required by law or these bylaws or unless there is to be considered at the meeting (i) amendments to these bylaws, (ii) an increase or decrease in the



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number of members, or (iii) removal or suspension of a member who is an officer.

B. Reasonable and sufficient notice: Except as otherwise expressly provided, it shall be reasonable and sufficient notice to a member to send notice by mail at least ten business days or by e-mail/facsimile at least ten business days before the meeting, addressed to such member at his or her usual or last known business address, or, to give notice to such member in person or by telephone at least ten business days before the meeting.

- 2.9 Quorum:** A majority of the regional planning committee officers shall constitute a quorum at any meeting of the members provided the Chair or Vice Chair is one of those present. Any meeting may be adjourned to such date or dates not more than ninety days after the first session of the meeting by a majority of the votes cast upon the question, whether or not a quorum is present, and the meeting may be held as adjourned without further notice.
- 2.10 Action by Vote:** Each voting member, representing a particular agency (one vote per agency) shall have one vote; non-voting members have no right to vote. When a quorum is present at any meeting, a majority of the votes properly cast by voting members present shall decide any question, including election to any office, unless otherwise provided by law or these bylaws.
- 2.11 Action by Writing or Phone:** Any action required or permitted to be taken at any meeting of the members may be taken without a meeting if all members entitled to vote on the matter consent to the action in writing and the written consents are filed with the records of the meetings of the members. Such consents shall be treated for all purposes as a vote at a meeting.
- 2.12 Proxies:** Voting members may vote either in person or by written proxy dated not more than one month before the meeting named therein, which proxies shall be filed before being noted with the secretary or other person responsible for recording the proceedings of the meeting. Unless otherwise specifically limited by their terms, such proxies shall entitle the holders thereof to vote at any adjournment of the meeting by the proxy shall terminate after the final adjournment of such meeting.





## Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

- 2.13 Voting on One's Own Application:** At no time shall a voting member vote on his/her application.
- 2.14 Special Interest Voting:** A voting member cannot have a commercial interest in any of his/her region and/or adjacent region application(s) on which he/she is reviewing, approving and/or voting.

### ARTICLE III OFFICERS AND AGENTS

- 3.1 Number and Qualification:** The officers of the Regional Committee shall be a Chair, Vice-Chair, Secretary/Treasurer, all Committee Chairs, and such other officers, if any, as the voting members may determine. All officers must be voting members of the Regional Committee.
- 3.2 Election:** The officers shall be elected by the voting members at their first meeting and, thereafter, at the annual meeting of the members.
- 3.3 Tenure:** The officers shall each hold office until the annual meeting of the members held within one year from the adoption of these bylaws, or until their successor, if any, is chosen, or in each case until he or she sooner dies, resigns, is removed or becomes disqualified.
- 3.4 Chair and Vice Chair:** The Chair shall be the chief executive officer of the Regional Committee and, subject to the control of the voting members, shall have general charge and supervision of the affairs of the Regional Committee. The Chair shall preside at all meetings of the Regional Committee.

The Vice Chair shall have such duties and powers, as the voting members shall determine. The Vice-Chair shall have and may exercise all the powers and duties of the Chair during the absence of the Chair or in the event of his or her inability to act.

- 3.5 Secretary/Treasurer:** The Secretary/Treasurer shall be the chief financial officer and the chief accounting officer of the Regional Committee. The Secretary/Treasurer shall be in charge of its financial affairs, funds, and valuable papers and shall keep full and



## Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

accurate records thereof. The Secretary/Treasurer shall record and maintain records of all proceedings of the members in a file or series of files kept for that purpose, which file or files shall be kept within the Region and shall be open at all reasonable times to the inspection of any member. Such file or files shall also contain records of all meetings and the original, or attested copies, of bylaws and names of all members and the address (including e-mail address, if available) of each. If the Secretary/Treasurer is absent from any meeting of the members, a temporary Secretary/Treasurer chosen at the meeting shall exercise the duties of the secretary at the meeting.

- 3.6 Suspension or Removal:** An officer may be suspended with cause by vote of a majority of the voting members.
- 3.7 Committees:** Sub-Committees shall be appointed by the Chair. They shall consist of the Technical Committee, and the Regulatory Committee. Other Committees may be added at the discretion of the Chair. All Committee Chairs will sit as voting members of the Executive Committee.
- 3.8 Resignation:** An officer may resign by delivering his or her written resignation to the Chair, Vice-Chair, or Secretary/Treasurer of the Regional Committee. Such resignation shall be effective upon receipt (unless specified to be effective at some other time), and acceptance thereof shall not be necessary to make it effective unless it so states.
- 3.9 Vacancies:** If the position of any officer becomes vacant, the voting members may elect a successor. Each such successor shall hold office for the remainder terms and in the case of the Chair, Vice Chair, and Secretary/Treasurer until his or her successor is elected and qualified, or in each case until he or she sooner dies, resigns, is removed or become disqualified.

## ARTICLE IV



# **Region 47 – 700 MHz Regional Planning Committee**

*Commonwealth of Puerto Rico*

## **AMENDMENTS**

- 4.1** The voting members present may by a two-thirds vote, alter, amend, or repeal any bylaws adopted by the Regional Committee members or otherwise adopt, alter, amend or repeal any provision which FCC regulation or these bylaws requires action by the voting members.

## **ARTICLE V DISSOLUTION**

- 5.1** This Regional Committee may be dissolved by the consent of two-thirds plus one of the members in good standing at a special meeting called for such purpose. The FCC shall be notified.

## **ARTICLE VI RULES OF PROCEDURES**

- 6.1** The Conduct of Regional Meetings including without limitation, debate, voting and any other issue not covered by the Bylaws, shall be governed by Robert's Rules of Order.



# Region 47 – 700 MHz Regional Planning Committee Commonwealth of Puerto Rico

## Appendix B – Region 47 Member List and Contact Information

Municipality	Representative Name	Address	Email Address	FAX	Phone
Adjuntas	JUAN G TORO	ADJUNTAS MUNICIPALITY OF SAN JOAQUIN #8 ASJUNTAS, PR 00601		(787)829-0686	(787)829-2780
Aguada	HECTOR HERNANDEZ	AGUADA CITY OF PO Box 517 AGUADA, PR 00602		(787)252-5056	(787)686-7000
Aguadilla		PO Box 1008 AGUADILLA, PR 00605			(787)891-1562
Aguas Buenas		PO Box P.O. Box 128 CITY HALL RAFAEL LASA ST AGUAS BUENAS, PR 00703		(787)732-6231	(787)732-8621
Aibonito	FRANK CHARRIEZ FIGURRA	PO Box 2004 AIBONITO, PR 00705			(787)735-0100
Añasco	HECTOR SOTO	PO Box P.O. BOX P.O. BOX 13 ROAD 109 ANASCO, PR 00610		(787)826-5605	(787)826-4068
Arecibo	MELVIN J GONZALEZ	PO Box 1086 MUNICIPIO DE ARECIBO ARECIBO, PR 00613			(787)879-0447
Arroyo	JESUS R GARCIA	PO Box 477 ARROYO, PR 00714-0477		(787)839-1333	P:(787)839-1330
Barceloneta	AMID MOLINA	PO Box 2049 BARCELONETA, PR 00617	<a href="mailto:omebta@coqui.net">omebta@coqui.net</a>	(787)846-3045	(787)846-3210
Barranquitas	Jose Mercado Molina	PO Box 250 CITY HALL BLDG BARRANQUITAS, PR 00794		(787)857-4946	(787)857-3594
Bayamón	ELIEZER MERCADO	PO Box 1588 BOX 1588 BAYAMON, PR 00619		(787)269-6860	(787)786-6400
Cabo Rojo		PO Box 1308 CABO ROJO, PR 00623		(787)851-7940	P:(787)851-2105
Caguas					
Camuy		PO Box 9536 ARECIBO, PR 00613			(787)878-1043
Canóvanas	Hommy Vazquez	PO Box 1612 CALLE AUTONOMIA FINAL CANOVANAS, PR 00729	<a href="mailto:hommyvazquez@gmail.com">hommyvazquez@gmail.com</a>	(787)256-7038	(787)876-2433
Carolina	EDWIN NEVAREZ	PO Box P.O. Box 8 CAROLINA, PR 00986-4022	<a href="mailto:enevare@carolina.gobierno.pr">enevare@carolina.gobierno.pr</a>	(787)769-4752	(787)257-7596
Cataño	Juan A. Contreras	PO Box 428 CATANO, PR 00962	<a href="mailto:policecontreras@yahoo.com">policecontreras@yahoo.com</a>	(787)275-0233	(787)788-0028
Cayey	VICTOR O VAZQUEZ	MUNICIPAL DE CAYEY APARTADO 371330 CAYEY, PR 00737-1330			(787)738-3372
Ceiba		PO Box 224 CEIBA, PR 00735			(787)885-2740
Ciales					
Cidra	ANGEL L MALAVE ZAYAS	BO SUD SECT TAMARINDO CARR 171 CIDRA, PR 00739		(787)739-5118	(787)739-4041
Coamo					
Comerio	SGT. REINALDO MARTINEZ	PO Box P.O. Box 1108 COMERIO, PR 00782			(787)875-2490
Corozal	ROBERTO HERNANDEZ	PO Box 393 CERVANTES ST NUM 9 COROZAL, PR 00783			(787)859-3060
Culebra					
Dorado					
Fajardo					



# Region 47 – 700 MHz Regional Planning Committee Commonwealth of Puerto Rico

Florida	MR. CARLOS R. VIDAL	PO Box 1168 ARIZMENDIZ #88 FLORIDA, PR 00650-1168	<a href="mailto:floridaomme@hotmail.com">floridaomme@hotmail.com</a>	(787)822-3327	(787)822-2074
Guánica	JACQUELINE GARCIA NEGRON	PO Box 785 GUANICA, PR 00653		(787)821-0092	(787)821-2777
Guayama					
Guayanilla		PO Box 5600550 GUAYANILLA, PR 00656		(787)835-2275	(787)835-6444
Guaynabo					
Gurabo					
Hatillo		PO Box 9536 ARECIBO, PR 00613			(809)878-1043
Hormigueros	RAFAEL MONTALVO VASQUES	PO Box 97 HORMIGUEROS, PR 00660			(809)849-2515
Humacao					
Isabela	CELESTINO GONZALES	PO Box P.O. Box 507 ISABELA, PR 00662		(787)872-0255	(787)872-0020
Jayuya	EDILBERTO SANTIAGO NEGRON DIR OMME	APARTADO 488 JAYUYA, PR 00664			(787)822-8016
Juana Díaz	JOSE RODRIQUEZ RIVERIA	PO Box 1409 JUANA DIAZ, PR 00795			(809)837-2185
Juncos					
Lajas	REMIGIO CAMACHO VELEZ	PO Box P.O. Box 910 LAJAS, PR 00667		(787)899-1733	(787)899-4760
Lares	MR. LUIS LOZANO	PO Box P.O. Box 218 GANDARA STREET #6 LARES, PR 00613		(787)897-3963	(787)897-7020
Las Marías		PO Box 9536 ARECIBO, PR 00613	<a href="mailto:sory_reyes@northcommpr.net">sory_reyes@northcommpr.net</a>		(787)878-1043
Las Piedras					
Loíza					
Luquillo					
Manatí		PO Box 3494 CAROLINA, PR 00984		(787)854-5765	(787)854-2110
Maricao	MR LUIS D VARGAS CARABALLO	PO Box 837 MARICAO, PR 00606		(787)838-2035	(787)838-2035
Maunabo					
Mayagüez	WILSON SEDA	PO Box 447 MAYAGUEZ, PR 00681-0447		(809)831-6522	(809)834-8585
Moca	ARIEL A TORRES	PO Box P.O. Box 9536 ARECIBO, PR 00613			(787)536-2961
Morovis		PO Box 9536 ARECIBO, PR 00613			
Naguabo					
Naranjito	VICTOR ZAYAS	PO Box P.O. Box APARTADO PO NARANJITO, PR 00719	<a href="http://www.dcc@isla.net">www.dcc@isla.net</a>	(787)869-0530	(787)869-1075
Orocovis		CITY HALL OROCOVIS, PR 00720			(809)867-5000
Patillas					
Peñuelas	RENE OCASIO	PO Box 10 PENUELAS, PR 00624		(787)836-0103	(787)836-1361
Ponce		PO Box 331709 CITY HALL PONCE, PR 00733-1709	<a href="mailto:POMPONCE@COQUINET">POMPONCE@COQUINET</a>	(787)848-6110	(787)848-7095
Quebradillas		PO Box 9536 ARECIBO, PR 00613			(787)878-1043
Rincón	JOSE M VALLE	PO Box 97 RINCON, PR 00677			(787)823-2010



# **Region 47 – 700 MHz Regional Planning Committee** *Commonwealth of Puerto Rico*

Río Grande					
Sabana Grande		BOX 356 SABANA GRANDE, PR 00747			(809)873-2060
Salinas					
San Germán	MARCOS GARCIA	PO Box P.O. Box 85 SAN GERMAN, PR 00683		(787)892-1114	(787)892-3500
San Juan	David Requena	PO Box 70179 San Juan, PR 00936-8179	<a href="mailto:drequena@sanjuancapital.com">drequena@sanjuancapital.com</a>	(787)753-9109	(787)765-4881
San Lorenzo					
San Sebastián	JORGE O ROBLES	PO Box 1603 PR RD 119 KM 35.7 BO CALABAZAS San Sebastian, PR 00685	<a href="mailto:PEPINO2000@PRTC.NET">PEPINO2000@PRTC.NET</a>	(787)896-5200	(787)896-2710
Santa Isabel					
Toa Alta	CARLOS PERALES	PO Box 82 TOA ALTA, PR 00953-0082		(787)870-0873	(787)870-1001
Toa Baja					
Trujillo Alto					
Utua	LUIS ROSARIO	PO Box 190 BETANCES ST 16 CITY HALL UTUA, PR 00641		(787)814-1527	(787)894-3505
Vega Alta	ANGEL OTERO	PO Box P.O. Box 1390 EGA ALTA, PR 00692		(787)270-1385	(787)883-4837
Vega Baja	INTE RAFAEL RODRIGUEZ	PO Box 9536 ARECIBO, PR 00613		(809)858-1080	(809)855-3767
Vieques					
Villalba	EDUARDO ORTIZ LABOY	PO Box 1338 FAJARDO, PR 00738-1338			(787)847-2500
Yabucoa					
Yauco	JORGE L VELAZQUEZ ALMODVAR	APARTARDO 1 YAUCO, PR 00698		(787)856-4070	(787)856-4050



## Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

### Appendix C – List of Municipalities within Region 47 with population and land size (km<sup>2</sup>)

Municipality	Population	Area (km. <sup>2</sup> )
Adjuntas	19,143	173
Aguada	42,042	78
Aguadilla	64,685	94
Aguas Buenas	29,032	78
Aibonito	26,493	80
Añasco	28,348	104
Arecibo	100,131	329
Arroyo	19,117	39
Barceloneta	22,322	62
Barranquitas	28,909	88
Bayamón	224,044	115
Cabo Rojo	46,911	185
Caguas	140,502	152
Camuy	35,244	121
Canóvanas	43,335	76
Carolina	186,076	120
Cataño	30,071	14
Cayey	47,370	131
Ceiba	18,004	70
Ciales	19,811	172
Cidra	42,753	93
Coamo	37,597	202
Comerio	20,002	73
Corozal	36,867	110
Culebra	1,868	28
Dorado	34,017	60
Fajardo	40,712	80
Florida	12,367	26
Guánica	21,888	93
Guayama	44,301	170
Guayanilla	23,072	109
Guaynabo	100,053	70





## Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

Gurabo	36,743	73
Hatillo	38,925	109
Hormigueros	16,614	28
Humacao	59,035	117
Isabela	44,444	145
Jayuya	17,318	104
Juana Díaz	50,531	158
Juncos	36,452	68
Lajas	26,261	157
Lares	34,415	161
Las Marías	11,061	119
Las Piedras	34,485	86
Loíza	32,537	62
Luquillo	19,817	67
Manatí	45,409	118
Maricao	6,449	96
Maunabo	12,741	54
Mayagüez	98,434	198
Moca	39,697	130
Morovis	29,965	101
Naguabo	23,753	136
Naranjito	29,709	73
Orocovis	23,844	164
Patillas	20,152	123
Peñuelas	26,719	116
Ponce	186,475	301
Quebradillas	25,450	60
Rincón	14,767	36
Río Grande	52,362	159
Sabana Grande	25,935	93
Salinas	31,113	180
San Germán	37,105	140
San Juan	434,374	122
San Lorenzo	40,997	139
San Sebastián	44,204	184
Santa Isabel	21,665	89



## Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

Toa Alta	63,929	71
Toa Baja	94,085	62
Trujillo Alto	75,728	54
Utuado	35,336	298
Vega Alta	37,910	73
Vega Baja	61,929	121
Vieques	9,106	135
Villalba	27,913	96
Yabucoa	39,246	142
Yauco	46,384	178



# Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

## Appendix D – Meeting Notices and Related Documentation



# PUBLIC NOTICE

Federal Communications Commission  
445 12th St., S.W.  
Washington, D.C. 20554

News media information 202 / 418-0500  
TTY 202 / 418-2555  
Internet: <http://www.fcc.gov>

DA 11-1191

July 13, 2011

### PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ANNOUNCES REGION 47 (PUERTO RICO) 700 MHz PUBLIC SAFETY REGIONAL PLANNING COMMITTEE TO HOLD MEETING

The Region 47 (Puerto Rico) 700 MHz Public Safety Regional Planning Committee (RPC) will hold a planning meeting on Thursday, July 21, 2011, from 1000 to 1600 hours at the Metropolitan Bus Authority of Puerto Rico located at Avenida De Diego #37, Urb. San Francisco en Rio Piedras (estamos frente a la Panadería y Repostería Los Cidrines). The telephone number for the location is (787) 767-0115.

The agenda for the 700 MHz meeting includes:

- Call to Order, roll call and recordation of attendance
- Review of previous 700 MHz planning actions by Region 47
- 700 MHz planning presentation and open discussion
- Description of planning committee roles and duties
- Election and assignment of open Region 47 700 MHz planning committee positions
- Review of action items and schedule for next meeting

The Region 47 Public Safety RPC meeting is open to the public. All eligible public safety providers in Region 47 may utilize these frequencies. It is essential that public safety agencies in all areas of government, including commonwealth, municipality, county, and nongovernmental organizations eligible under Section 90.523 of the Commission's rules, 47 C.F.R. § 90.523, be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate, and represent their agency's needs.

All interested parties wishing to participate in planning for the use of public safety spectrum in the 700 MHz band within Region 47 should plan to attend. For further information, please contact:

Ferdinand Cedeno, PE, Chairperson  
Region 47 (Puerto Rico) 700 MHz RPC  
P.O. Box 3858  
Bayamon Gardens Station  
Bayamon, PR 00958  
(787) 504-7110  
[FCedeno@dtsp.gov.pr](mailto:FCedeno@dtsp.gov.pr)

- FCC -



## Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*



# PUBLIC NOTICE

Federal Communications Commission  
445 12th St., S.W.  
Washington, D.C. 20554

News media information 202 / 418-0500  
Internet: <http://www.fcc.gov>  
TTY: 1-888-835-5322

DA 11-1462

August 26, 2011

### **PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ANNOUNCES REGION 47 (PUERTO RICO) 700 MHz REGIONAL PLANNING COMMITTEE TO HOLD MEETING**

The Region 47 (Puerto Rico) Public Safety Regional Planning Committee (RPC) will hold a meeting on Thursday, September 15, 2011, from 11:00 a.m. to 3:00 p.m., at the Roberto Sanchez Vilella Government Center, De Diego Avenue, Stop 22, South Building, P Floor, Directoria de Desarrollo Comunitario, Santurce, Puerto Rico 00907. The telephone number for the location is (787) 725-7441.

The agenda for the 700 MHz meeting includes:

- Call to Order
- Record attendance
- Review Region 47 700 MHz planning actions
- Discussion and 700 MHz planning presentation
- Ratification of 700 MHz Plan
- Review action items
- Schedule next meeting

The Region 47 Public Safety RPC meeting is open to the public. All eligible public safety providers in Region 47 may utilize these frequencies. It is essential that eligible public safety agencies in all areas of government, including commonwealth, municipality, county, and non-governmental organizations eligible under Section 90.523 of the Commission's Rules be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate, and represent their agency's needs.

All interested parties wishing to participate in planning for the use of public safety spectrum in the 700 MHz band within Region 47 should plan to attend. For further information, please contact:

Ferdinand Cedenio, Chairman  
Region 47 (Puerto Rico) 700 MHz RPC  
P.O. Box 3858  
Bayamon Gardens Station  
Bayamon, PR. 00958  
[Ferdinand.Cedenio@gmail.com](mailto:Ferdinand.Cedenio@gmail.com)

- FCC -



# Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

## Meeting Minutes

**Location:** Avenida de Diego #37, Urb. San Francisco en Rio Piedras.  
**Date:** July 21, 2011  
**Start Time:** 1000 EDT  
**End Time:** 1600 EDT

## Attendees

Name	Email Address
Ali Shahnami	<a href="mailto:ali.shahnami@acdtelecom.com">ali.shahnami@acdtelecom.com</a>
Marisabel Shahnami	<a href="mailto:maria.shahnami@acdtelecom.com">maria.shahnami@acdtelecom.com</a>
Paolo Ronquillo	<a href="mailto:paolo.ronquillo@acdtelecom.com">paolo.ronquillo@acdtelecom.com</a>
Ferdinand Cedeño	<a href="mailto:Ferdinand.cedeno@gmail.com">Ferdinand.cedeno@gmail.com</a>
Felix Garcia	<a href="mailto:Fgarcia@oasp.gobierno.pr">Fgarcia@oasp.gobierno.pr</a>
Jose A Mercado	<a href="mailto:Jamercado@ciudad.baranquitas.com">Jamercado@ciudad.baranquitas.com</a>
Esaud G Cortijo	<a href="mailto:morenopr5@yahoo.com">morenopr5@yahoo.com</a>
Daisy R Santiago	<a href="mailto:omejayuya@hotmail.com">omejayuya@hotmail.com</a>
Ellis Rodriguez	<a href="mailto:erodriguez@agriculturapr.gov">erodriguez@agriculturapr.gov</a>
Jesus Rivera	<a href="mailto:jesus.rivera@ramajudicial.pr">jesus.rivera@ramajudicial.pr</a>
Angel M Garcia Robles	<a href="mailto:morovis@aemead.gobierno.pr">morovis@aemead.gobierno.pr</a>
Hector M Vega Molina	<a href="mailto:manati@aemead.gobierno.pr">manati@aemead.gobierno.pr</a>
Carmen. Jorge	<a href="mailto:cijorge@csp.gobierno.pr">cijorge@csp.gobierno.pr</a>
Luis Gonzalez	<a href="mailto:lgonzalez@codecom.com">lgonzalez@codecom.com</a>
Jose L Vasquez	<a href="mailto:jvasquez@harris.com">jvasquez@harris.com</a>
Miguel Apuente	<a href="mailto:miguel@intracom.com">miguel@intracom.com</a>
Luis A Amaro	<a href="mailto:loamaro@policia.pr.gov">loamaro@policia.pr.gov</a>
Eliezer Gomez	<a href="mailto:egomez2@policia.pr.gov">egomez2@policia.pr.gov</a>



## **Region 47 – 700 MHz Regional Planning Committee**

*Commonwealth of Puerto Rico*

### **Meeting Minutes**

1. Call to Order - The acting Chair, Mr. Cedenó called the meeting to order
2. Roll Call / Record of attendance - Mr. Cedenó distributed the sign in sheet to the members
3. Review of previous 700 MHz planning actions by Region 47 - Mr. Cedeño officially reconvened and kicked off the meeting, by giving a brief history of 700 MHz plan, its purpose., and then introduced Mrs. Shahnamí as the ACD Telecom President
4. 700 MHz planning presentation and open discussion - Mrs. Shahnamí spoke about ACD Telecom's role in developing 700 MHz plan from the beginning until its approval by the Commission. She then introduced Ali Shahnamí and Paolo Ronquillio of ACD Telecom and their role in this process
5. Description of planning committee roles and duties - Mr. Shahnamí and Mr. Ronquillio reviewed the planning process, election of officers, subcommittees' duties and goals
6. Election and assignment of open Region 47 700 MHz planning committee positions
  - a) Nominations and Elections for officer position in the RPC were conducted resulting in the following appointments:
    1. Chairperson – Mr. Ferdinand Cedeño
    2. Vice-Chair – Mr. Felix Garcia
    3. Secretary – Mr. Eliezer Gomez



## Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

- b) Sign-up sheets for the technical and Regulatory Committees were passed around and volunteers were taken to populate these committees.

### 1) Technical Committee

- ❖ M.P. Daisy Rivera
- ❖ Jose A Mercado
- ❖ Angel M Robles
- ❖ Hector M Vega
- ❖ Luis Amaro Velasquez

### 2) Regulatory Committee

- ❖ Luis J Gonzalez
- ❖ Eliezer Gomez
- ❖ Carmen I Jorge
- ❖ Jose G Ramirez
- ❖ Ellis E Rodriguez

## 7. Review of action items and schedule for next meeting

Mr. Shahnami proceeded with going over the draft 700 MHz plan which resulted in the following points of discussion and changes.

- Mr. Cedeño's email address was updated.
- The Population of Puerto Rico was adjusted from 3.9 to 3.5 million people.
- The agency in charge of interoperability channels was designated to be PREMA.
- The RPC agreed that a window method of accepting applications would be implemented.
- The RPC wished to see a version of the document which did not limit areas of operation. (AOP) to 5 miles beyond jurisdictional lines.
- The time frame for resubmitting applications was extended from 30 days to 60 days.
- The scoring Matrix was discussed





## **Region 47 – 700 MHz Regional Planning Committee** *Commonwealth of Puerto Rico*

Mr. Ronquillo discussed the CAPRAD System and went through the allotment tables. This resulted in long discussion as to the way the geographic distributions of channels would be re-allotted into Department of Homeland Security Regions/Districts.

The Region 47 RPC bylaws were discussed, amended and approved. The proposed meeting schedule was changed from a minimum of 1 annual meeting to a minimum of a bi-annual meeting schedule with a tentative plan to hold monthly webinars with the Technical and Regulatory committees.

The next meeting will be a webinar, tentatively scheduled for August 5th at 1000 ET.



## **Region 47 – 700 MHz Regional Planning Committee** *Commonwealth of Puerto Rico*

Minutes from August 12, 2011  
Region 47 Technical Committee Webinar

Attendees: Ferdinand Cedeño, Hector Vega, Eliazar Gomez, Luis Amado, Ali Shahnami, Paolo Ronquillo, Maria Shahnami and Felix Garcia

Meeting opened @ 1600 ED

Ali Shahnami stated items that were adjusted/removed in the Draft:

1. Removal of reference to 3 to 5 miles
2. Area of operation technically and operationally justified
3. Removed scoring matrix
4. Showed flow chart so anybody can see our application process by simply reviewing the chart

The following items were discussed in details;

- From Region 48, Virgin Island's Ali Shahnami spoke to Rodney Querrard. Mr Querrard said he does not know anything about the subject and wanted no involvement. He also provided us with the means to contact Mr. Angel Turnbull who would act as the Region 48 POC. Cedeño said he would be in the Virgin Islands next Wednesday and would like ACD to email Mr. Turnbull his information so he can call him when he is there.
  - Reviewed Section 3.3, page 13, Application Flow Chart from NCC. Mr. Shahnami explained that it was routine and easy to follow. Mr. Shahnami stated that the CAPRAD allotment will be updated once the plan has been approved.
  - Mr. Shahnami requested that all applicants ask for Slow Growth so they have up to 5 years to construct, otherwise the license will be canceled in 12 months
  - Page 18: 3 miles refers to limit low power operation, for example like a school campus or hospital
  - The applicant can make changes after FCC approves the plan; then one can submit modifications to the plan
  - Everyone was asked if there were any questions or concerns. Everyone said no.
  - Mr. Cedeño will email ACD the address and time for the September 15 invitation in Puerto Rico to attend the Region 47 Committee meeting
  - Meeting scheduled for September 15; 0900 for the technical team and 1100 for the entire Region 47 Regional Planning Committee (RPC). Invitation must go out no later than 30 days prior to the meeting, which would be on or before Tuesday the 16<sup>th</sup>
- Meeting was adjourned @ 1645 ET



# Region 47 – 700 MHz Regional Planning Committee Commonwealth of Puerto Rico

Technical Committee Sign-In Sheet	
<b>Project:</b> Region 47 – 700 MHz Planning Regulatory Committee	<b>Meeting Date:</b> July 21, 2011 @ 10:00 AM EDT
<b>Address:</b> Metropolitan Bus Authority of Puerto Rico, Avenida De Diego #37, Urb. San Francisco en Río Piedras (estamos frente a la Panadería y Repostería Los Cidrines). Telephone number for the building is 787-767-0115	<b>Place/Room:</b>
Please Print and Include all Information	
Attendee Name: M.P. Daisy Rivera #017	Phone: (787) 828-4420
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Address: C17 FAS Unit Rexville Bldg. 00957	Fax: 787-269-6660
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Technical Committee Sign-In Sheet	
<b>Project:</b> Region 47 – 700 MHz Planning Regulatory Committee	<b>Meeting Date:</b> July 21, 2011 @ 10:00 AM EDT
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Address: PO Box 70166 S.J., P.R. 00986	Fax: 868166
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Address:	Fax:
Attendee Name:	Phone:
Agency Name:	E-mail:
Address:	Fax:
Attendee Name:	Phone:
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# Region 47 – 700 MHz Regional Planning Committee Commonwealth of Puerto Rico

Regulatory Committee Sign-In Sheet	
<b>Project:</b> Region 47 – 700 MHz Planning Regulatory Committee	<b>Meeting Date:</b> July 21, 2011 @ 10:00 AM EDT
<b>Address:</b> Metropolitan Bus Authority of Puerto Rico, Avenida De Diego #37, Urb. San Francisco en Río Piedras (estamos frente a la Panadería y Repostería Los Cidrines). Telephone number for the building is 787-767-0115	<b>Place/Room:</b>
Please Print and Include all Information	
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Address: <i>Ave. Muñoz Rivera #50 Hato Rey</i>	Fax: <i>756-8086</i>
Attendee Name: <i>José G. Ramírez</i>	Phone: <i>787-977-0049 / 787-977-0067</i>
Agency Name: <i>P.R. Treasury Department (STATE)</i>	E-mail: <i>rc6011@hacienda.gobierno.pr</i>
Address: <i>Paseo Condorera #10 SAN JUAN PR 00902</i>	Fax: <i>787-977-0048</i>
Attendee Name: <i>Ellis EDUARDO RODRIGUEZ</i>	Phone: <i>787-515-2875</i>
Agency Name: <i>Depart. Agricultura</i>	E-mail: <i>erodriguez@agricultura.pr.gov</i>
Address: <i>Ave Fernando Juncos Parado 12 1/2</i>	
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Agency Name:	E-mail:
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Address:	Fax:





# Region 47 – 700 MHz Regional Planning Committee Commonwealth of Puerto Rico

Region 47 700 MHz Regional Planning Committee Sign-In Sheet - July 21, 2011				
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Policia de P.R.	Abel Elizer Gomez	Elizergomez@policia.pr.gov	787-205-3061	<i>[Signature]</i>

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Region 47 700 MHz Regional Planning Committee Sign In Sheet - July 21, 2011				
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Aguadilla				
Aguas Buenas				
Albionito				
Añasco				
Arecibo				
Arroyo				
Barceloneta				
Barranquitas				
Bayamón				
Cabo Rojo				
Caguas				
Camuy				
Canóvanas				
Carolina				
Cataño				
Cayey				
Ceiba				
Ciales				
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Coamo				
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Fajardo				
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Gurabo				
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Barranquitas				
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# Region 47 – 700 MHz Regional Planning Committee Commonwealth of Puerto Rico

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Pailitas					
Perfuelas					
Ponce					
Quebradillas					
Rincón					
Rio Grande					
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San Sebastián					
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Utuado					
Vega Alta					
Vega Baja					
Vieques					
Villalba					
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## **Region 47 – 700 MHz Regional Planning Committee** *Commonwealth of Puerto Rico*

### **Appendix E – Common Air Interface**

#### **Project 25 Common Air Interface Interoperability Channel Parameters**

Certain common P25 parameters need to be defined to ensure digital radios operating on the 700 MHz Interoperability Channels can communicate.

##### **Network Access Code**

In the Project 25 Common Air Interface definition, the Network Access Code (NAC) is analogous to the use of CTCSS and CDCSS signals in analog radio systems. It is a code transmitted in the pre-amble of the P25 signal and repeated periodically throughout the transmission. Its purpose is to provide selective access to and maintain access to a receiver. It is also used to block nuisance and other co-channel signals. There are up to 4096 of these NAC codes. For ease of migration in other frequency bands, a NAC code table was developed which shows a mapping of CTCSS and CDCSS signals into corresponding NAC codes. Document TIA/EIA TSB102.BAAC contains NAC code table and other Project 25 Common Air Interface Reserve Values.

Use of corresponding NAC code \$293 is required for the 700 MHz Interoperability Channel NAC code.

##### **Talk group ID**

In the Project 25 Common Air Interface definition, the Talk group ID on conventional channels is analogous to the use of talk groups in trunking. In order to ensure that all users can communicate, all units should use a common Talk group ID.

Recommendation: Use P25 default value for Talk group ID = \$0001

##### **Manufacturer's ID**

The Project 25 Common Air Interface allows the ability to define manufacturer specific functions. In order to ensure that all users can communicate, all units should not use a specific Manufacturer's ID, but should use the default value of \$00.

##### **Message ID**



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The Project 25 Common Air Interface allows the ability to define specific message functions. In order to ensure that all users can communicate, all units should use the default Message ID for unencrypted messages of \$00000000000000000000.

### **Encryption Algorithm ID and Key ID**

The Project 25 Common Air Interface allows the ability to define specific encryption algorithms and encryption keys. In order to ensure that all users can communicate, encryption should not be used on the Interoperability Calling Channels. All units should use the default Algorithm ID for unencrypted messages of \$80 and default Key ID for unencrypted messages 0000. These same defaults may be used for the other Interoperability channels when encryption is not used.

Use of encryption is allowed on the other Interoperability channels. Regional Planning Committees need to define appropriate Message ID, Encryption Algorithm ID, and Encryption Key ID to be used in the encrypted mode on Interoperability channels.



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## Appendix F – Simplified 700 MHz Pre-assignment Rules

### 1. Introduction

This section describes a process for coordinating the initial block assignments of 700 MHz channels. The allocation of spectrum provided by CAPRAD is for planning purposes, particularly defining the minimum channel usage at the border of Region 47 and neighboring Region. Channel packing beyond CAPRAD will be based upon actual technical parameters and jurisdictional coverage requirements of the specific licensees. As such, CAPRAD provides a starting point for channel allotment not the most efficient utilization of the spectrum. The Region 47 Committee has the authority to utilize specific engineering analysis to move beyond CAPRAD to satisfy the spectrum requirements of public safety licensees.

### 2. Overview

Assignments will be based on a defined service area for each applicant. This will normally be an area defined by geographical or political boundaries such as city, municipality or by a data file consisting of line segments creating a polygon that encloses the defined area. The service contour is normally allowed to extend slightly beyond the geo/political boundaries such that systems can be designed for maximum signal levels within the boundaries, or coverage area. Systems must also be designed to minimize signal levels outside their geo/political boundaries to avoid interference into the coverage area of other co-channel users.

**Definition:** Service area is the actual geographic area serviced by the licensee. This includes the jurisdictional area and any extension of the jurisdictional area required to support primary communications requirements as justified to the Region 47 Committee.

**Definition:** Coverage area is the service area or area of operations (AOP) of the applicant about a fixed site.

The signal level permitted at the edge of the coverage area is no more than 40 dB $\mu$ . Protection of an existing system is based upon signal strength at the edge of the coverage area of 40 dB $\mu$ .

For co-channel assignments, the co-channel 5 dB $\mu$  interfering contour will be allowed to overlap the 40 dB $\mu$  service contour of the system being evaluated only if the overlap degradation of service area does not exceed 2%. For adjacent and alternate channels, the 60 dB $\mu$  interfering contour will be allowed to overlap the 40 dB $\mu$  service contour of the system being evaluated if the overlap degradation of service area does not exceed 2%. The service contour reliability is defined at F(50, 50), while the interference contours are defined at F(50, 50).



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### **3. Discussion**

Based upon the ERP/HAAT limitations referenced in FCC 90.541(a), the maximum field strength will be limited to 40 dB relative to  $1\mu\text{V/m}$  (customarily denoted as 40 dB $\mu$ ). It is assumed that this limitation will be applied similar to the way it is applied in the 821-824/866-869 MHz band. That is, a 40 dB $\mu$  field strength can be deployed up to a defined distance (extended service area) beyond the edge of the service area, based on the size of the service area or type of applicant, i.e. city, municipality or island wide system. The value of 40 dB $\mu$  in the 700 MHz band corresponds to a signal of -92.7 dBm, received by a half-wavelength dipole antenna.

Two primary concerns are addressed by the Region 47 Committee:

- Public safety systems must provide reliable ubiquitous coverage within the service area
- Public safety systems must be cost effective and not prohibitive to construct and operate

The Committee has chosen to define the service area to the public safety standard 40 dB $\mu$  at 50% faded reliability to a service area areas defined by the requested AOP on the application (given adequate justification).

### **4. Portable In-Building Coverage**

Most Public Safety communications systems today are designed for portable in building coverage and the requirement for a typical coverage reliability of 95%. Buildings of 20 dB or greater penetration loss can be located at any point within the jurisdictional polygon of the licensee. The permitting of the service contour to extend beyond the jurisdictional polygon at 40 dB $\mu$  faded 90% reliability will improve the ability to communicate into buildings located at the jurisdictional line. However, the Committee understands that this extended service area alone may not address the in-building requirements of all licensees, particularly when a very high loss building is located at or very close to such boundaries. In these cases the licensee will need to specifically address the particular building with unique and innovative approaches.

### **5. Interfering Contour**

The coverage and protected areas of an existing system are plotted at different signal strengths. The coverage signal strength is permitted at 40 dB $\mu$ , while the system will be protected from co-channel and adjacent channel system, both within and outside of Region 47, by the nationally accepted value of 40 dB $\mu$ .

Signal levels are calculated using methods described in TIA TSB-88-C (or a subsequent later version), by using Okumura-Hata-Davidson propagation modeling, median reliability and relative to a suburban environment. The modeling is to be based on at least 1 arc second terrain data.



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The diffraction portion of the modeling, where it can serve to artificially limit the size of the plot, must be disabled<sup>11</sup>.

### **6. Co-Channel Interfering Contour Recommendation**

The Committee will allow the constructed 40 dBμ F(50,50) service contour to extend beyond the edge of the defined service area by the distance indicated in paragraph 5. A co-channel shall be allowed to have its 5 dBμ (50,50) interfering contour overlap the 40 dBμ service contour of the system being evaluated only if the reduction of overlap of the service area does not exceed 2% and does not overlap into the jurisdictional service area.

### **7. Adjacent and Alternate Channel Considerations**

Adjacent and alternate channels are treated as being on channel signals reduced by the value of Adjacent Channel Coupled Power (ACCP). This assumes that the primary mechanism for interference results from transmitter sideband noise appearing as an on-channel signal within the receiver bandwidth. Using the FCC 90.543 values of ACCP can facilitate the coordination of adjacent and alternate channels.

Based on FCC 90.543 and the P25 requirement for an ACCP 65 dB into a 6.0 KHz channel bandwidth and leaving room for a migration from Phase 1 to Phase 2, allows for making the simplifying assumption that 65 dB ACCP is available for both adjacent 25 KHz spectrum blocks. For spectrum blocks spaced farther away, it must be assumed that transmitter filtering, in addition to transmitter performance improvements due to greater frequency separation, will further reduce the ACCPR. Therefore it is recommended that a consistent value of 65 dB ACCPR be used for the initial coordination of adjacent 25 KHz channel blocks. Rounding to be conservative due to the possibility of multiple sources allows the Adjacent Channel Interfering Contour to be approximately 20 dB above the 40 dBμ service contour, at 60 dBμ.

### **8. Adjacent Channel Interfering Contour Recommendation**

An adjacent (25 KHz) channel shall be allowed to have its 60 dBμ (50,50) interfering contour overlap the 40 dBμ service contour of the system being evaluated only if the overlap degradation of the service area does not exceed 2% and does not overlap into the jurisdictional service area.

### **9. Final Detailed Coordination**

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<sup>11</sup> Diffraction modeling may limit the size of the contour by drawing the contour line at the first point where the signal drops below the contour limit, even if the signal increases beyond that point.





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The coordination for frequencies prior to system procurement does not address the specific and unique circumstances of the particular system and is only adequate for presorting large blocks of spectrum to potential entities. A more detailed analysis should be included in the actual design phase to take all the issues into consideration. A detailed report to the Region 47 Committee is to be submitted by each license detailing the “As Built” system once it is completed for the purposes of subsequent channel assignment. This information is available to other potential licensees to assist with licensing and coordinating those new systems to avoid interference.

Additional factors that should be considered include:

- Degree of Service Area Overlap
- Different size of Service Areas
- Different ERPs and HAATs
- Actual Terrain and Land Usage
- Differing User Reliability Requirements
- Migration from 12.5 kHz to 6.25 kHz efficiency standard, as required
- Site Separation
- Actual ACCP
- Balanced Systems
- Mobiles vs. Portables
- Use of voting
- Use of simulcast
- Radio specifications
- Simplex Operation

Special attention needs to be paid to the use of simplex operation. In this case, an interferer can be on an offset adjacent channel and in extremely close proximity to the victim receiver. This is especially critical in public safety where simplex operations are frequently used at a fire scene or during police operation. Simplex operations, other than those on the low power or interoperable channels, are generally not offered protection from interference.

### **10. Carrier to Interference Requirements**

There are two different ways that Interference is considered.

- Co Channel
- Adjacent and Alternate Channels

Co-channel C/I is defined as by the 40 and 5 dB $\mu$  contours for a difference of 35 dB. The co-



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channel contours are permitted to overlap only in the extended service area that extends the jurisdictional border and only to the extent that the 40 dB $\mu$  F(50,50) service area is not reduced by more than a combined 2%. Adjacent and alternate channel C/I are defined by the 40 and 60 dB $\mu$  contours for a difference of -20 dB. The adjacent and alternate channel contours are permitted to overlap only in the extended service area that extends from the jurisdictional border and/AOP and only to the extent that the 40 dB $\mu$  F(50,50) extended service area is not reduced by more than a combined 2%.





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### Appendix G – Channel Assignments by Geographic Area

Municipality	Class	Band Width	Channel	Base Frequency	Mobile Frequency
<a href="#">Adjuntas</a>	General Use	Voice 25.0KHz	469-472	771.9375	801.9375
	General Use	Voice 25.0KHz	553-556	772.4625	802.4625
	General Use	Voice 25.0KHz	665-668	773.1625	803.1625
	General Use	Voice 25.0KHz	825-828	774.1625	804.1625
	State License	Voice 25.0KHz	885-888	774.5375	804.5375
<a href="#">Aguada</a>	General Use	Voice 25.0KHz	93-96	769.5875	799.5875
	General Use	Voice 25.0KHz	333-336	771.0875	801.0875
	General Use	Voice 25.0KHz	405-408	771.5375	801.5375
	General Use	Voice 25.0KHz	465-468	771.9125	801.9125
	General Use	Voice 25.0KHz	537-540	772.3625	802.3625
	General Use	Voice 25.0KHz	605-608	772.7875	802.7875
	General Use	Voice 25.0KHz	909-912	774.6875	804.6875
	State License	Voice 25.0KHz	305-308	770.9125	800.9125
	State License	Voice 25.0KHz	645-648	773.0375	803.0375
<a href="#">Aguadilla</a>	General Use	Voice 25.0KHz	205-208	770.2875	800.2875
	General Use	Voice 25.0KHz	381-384	771.3875	801.3875
	General Use	Voice 25.0KHz	477-480	771.9875	801.9875
	General Use	Voice 25.0KHz	677-680	773.2375	803.2375
	General Use	Voice 25.0KHz	757-760	773.7375	803.7375
	State License	Voice 25.0KHz	109-112	769.6875	799.6875
	State License	Voice 25.0KHz	725-728	773.5375	803.5375
	State License	Voice 25.0KHz	889-892	774.5625	804.5625
<a href="#">Aguas Buenas</a>	General Use	Voice 25.0KHz	345-348	771.1625	801.1625
	General Use	Voice 25.0KHz	481-484	772.0125	802.0125
	General Use	Voice 25.0KHz	549-552	772.4375	802.4375
	State License	Voice 25.0KHz	805-808	774.0375	804.0375
<a href="#">Aibonito</a>	General Use	Voice 25.0KHz	353-356	771.2125	801.2125



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	General Use	Voice 25.0KHz	489-492	772.0625	802.0625
	General Use	Voice 25.0KHz	757-760	773.7375	803.7375
	State License	Voice 25.0KHz	733-736	773.5875	803.5875
<a href="#">Anasco</a>	General Use	Voice 25.0KHz	249-252	770.5625	800.5625
	General Use	Voice 25.0KHz	457-460	771.8625	801.8625
	General Use	Voice 25.0KHz	593-596	772.7125	802.7125
	General Use	Voice 25.0KHz	741-744	773.6375	803.6375
	General Use	Voice 25.0KHz	829-832	774.1875	804.1875
	General Use	Voice 25.0KHz	869-872	774.4375	804.4375
	State License	Voice 25.0KHz	149-152	769.9375	799.9375
	State License	Voice 25.0KHz	313-316	770.9625	800.9625
<a href="#">Arecibo</a>	General Use	Voice 25.0KHz	285-288	770.7875	800.7875
	General Use	Voice 25.0KHz	341-344	771.1375	801.1375
	General Use	Voice 25.0KHz	717-720	773.4875	803.4875
	State License	Voice 25.0KHz	729-732	773.5625	803.5625
<a href="#">Arroyo</a>	General Use	Voice 25.0KHz	285-288	770.7875	800.7875
	General Use	Voice 25.0KHz	421-424	771.6375	801.6375
	General Use	Voice 25.0KHz	605-608	772.7875	802.7875
	General Use	Voice 25.0KHz	873-876	774.4625	804.4625
	General Use	Voice 25.0KHz	945-948	774.9125	804.9125
	State License	Voice 25.0KHz	853-856	774.3375	804.3375
<a href="#">Barceloneta</a>	General Use	Voice 25.0KHz	333-336	771.0875	801.0875
	General Use	Voice 25.0KHz	465-468	771.9125	801.9125
	General Use	Voice 25.0KHz	617-620	772.8625	802.8625
	General Use	Voice 25.0KHz	673-676	773.2125	803.2125
	State License	Voice 25.0KHz	809-812	774.0625	804.0625
<a href="#">Barranquitas</a>	General Use	Voice 25.0KHz	585-588	772.6625	802.6625
	General Use	Voice 25.0KHz	749-752	773.6875	803.6875
	General Use	Voice 25.0KHz	901-904	774.6375	804.6375
	State License	Voice 25.0KHz	845-848	774.2875	804.2875



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<a href="#"><u>Bayamon</u></a>	General Use	Voice 25.0KHz	281-284	770.7625	800.7625
	General Use	Voice 25.0KHz	533-536	772.3375	802.3375
	General Use	Voice 25.0KHz	669-672	773.1875	803.1875
	State License	Voice 25.0KHz	773-776	773.8375	803.8375
<a href="#"><u>Cabo Rojo</u></a>	General Use	Voice 25.0KHz	49-52	769.3125	799.3125
	General Use	Voice 25.0KHz	137-140	769.8625	799.8625
	General Use	Voice 25.0KHz	369-372	771.3125	801.3125
	General Use	Voice 25.0KHz	445-448	771.7875	801.7875
	General Use	Voice 25.0KHz	557-560	772.4875	802.4875
	General Use	Voice 25.0KHz	917-920	774.7375	804.7375
	State License	Voice 25.0KHz	853-856	774.3375	804.3375
	State License	Voice 25.0KHz	929-932	774.8125	804.8125
<a href="#"><u>Caguas</u></a>	General Use	Voice 25.0KHz	329-332	771.0625	801.0625
	General Use	Voice 25.0KHz	449-452	771.8125	801.8125
	General Use	Voice 25.0KHz	661-664	773.1375	803.1375
	State License	Voice 25.0KHz	813-816	774.0875	804.0875
<a href="#"><u>Camuy</u></a>	General Use	Voice 25.0KHz	173-176	770.0875	800.0875
	General Use	Voice 25.0KHz	213-216	770.3375	800.3375
	General Use	Voice 25.0KHz	421-424	771.6375	801.6375
	General Use	Voice 25.0KHz	517-520	772.2375	802.2375
	General Use	Voice 25.0KHz	905-908	774.6625	804.6625
	State License	Voice 25.0KHz	273-276	770.7125	800.7125
	State License	Voice 25.0KHz	813-816	774.0875	804.0875
<a href="#"><u>Canovanas</u></a>	General Use	Voice 25.0KHz	349-352	771.1875	801.1875
	General Use	Voice 25.0KHz	493-496	772.0875	802.0875
	General Use	Voice 25.0KHz	705-708	773.4125	803.4125
	State License	Voice 25.0KHz	893-896	774.5875	804.5875
<a href="#"><u>Carolina</u></a>	General Use	Voice 25.0KHz	201-204	770.2625	800.2625
	General Use	Voice 25.0KHz	245-248	770.5375	800.5375
	General Use	Voice 25.0KHz	553-556	772.4625	802.4625
	State License	Voice 25.0KHz	885-888	774.5375	804.5375



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	State License	Voice 25.0KHz	925-928	774.7875	804.7875
<a href="#">Catano</a>	General Use	Voice 25.0KHz	253-256	770.5875	800.5875
	General Use	Voice 25.0KHz	357-360	771.2375	801.2375
	General Use	Voice 25.0KHz	497-500	772.1125	802.1125
	General Use	Voice 25.0KHz	597-600	772.7375	802.7375
	General Use	Voice 25.0KHz	709-712	773.4375	803.4375
	State License	Voice 25.0KHz	849-852	774.3125	804.3125
<a href="#">Cayey</a>	General Use	Voice 25.0KHz	241-244	770.5125	800.5125
	General Use	Voice 25.0KHz	501-504	772.1375	802.1375
	General Use	Voice 25.0KHz	821-824	774.1375	804.1375
	State License	Voice 25.0KHz	929-932	774.8125	804.8125
<a href="#">Ceiba</a>	General Use	Voice 25.0KHz	209-212	770.3125	800.3125
	General Use	Voice 25.0KHz	377-380	771.3625	801.3625
	General Use	Voice 25.0KHz	505-508	772.1625	802.1625
	General Use	Voice 25.0KHz	637-640	772.9875	802.9875
	State License	Voice 25.0KHz	309-312	770.9375	800.9375
<a href="#">Ciales</a>	General Use	Voice 25.0KHz	85-88	769.5375	799.5375
	General Use	Voice 25.0KHz	257-260	770.6125	800.6125
	General Use	Voice 25.0KHz	437-440	771.7375	801.7375
	State License	Voice 25.0KHz	769-772	773.8125	803.8125
<a href="#">Cidra</a>	General Use	Voice 25.0KHz	213-216	770.3375	800.3375
	General Use	Voice 25.0KHz	517-520	772.2375	802.2375
	General Use	Voice 25.0KHz	789-792	773.9375	803.9375
	State License	Voice 25.0KHz	153-156	769.9625	799.9625
	State License	Voice 25.0KHz	689-692	773.3125	803.3125
<a href="#">Coamo</a>	General Use	Voice 25.0KHz	205-208	770.2875	800.2875
	General Use	Voice 25.0KHz	477-480	771.9875	801.9875
	General Use	Voice 25.0KHz	713-716	773.4625	803.4625
	State License	Voice 25.0KHz	653-656	773.0875	803.0875



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<a href="#"><u>Comerio</u></a>	General Use	Voice 25.0KHz	249-252	770.5625	800.5625
	General Use	Voice 25.0KHz	441-444	771.7625	801.7625
	General Use	Voice 25.0KHz	621-624	772.8875	802.8875
	State License	Voice 25.0KHz	889-892	774.5625	804.5625
<a href="#"><u>Corozal</u></a>	General Use	Voice 25.0KHz	217-220	770.3625	800.3625
	General Use	Voice 25.0KHz	525-528	772.2875	802.2875
	General Use	Voice 25.0KHz	613-616	772.8375	802.8375
	General Use	Voice 25.0KHz	917-920	774.7375	804.7375
	State License	Voice 25.0KHz	313-316	770.9625	800.9625
<a href="#"><u>Culebra</u></a>	General Use	Voice 25.0KHz	41-44	769.2625	799.2625
	General Use	Voice 25.0KHz	85-88	769.5375	799.5375
	General Use	Voice 25.0KHz	129-132	769.8125	799.8125
	General Use	Voice 25.0KHz	177-180	770.1125	800.1125
	General Use	Voice 25.0KHz	249-252	770.5625	800.5625
	General Use	Voice 25.0KHz	289-292	770.8125	800.8125
	General Use	Voice 25.0KHz	353-356	771.2125	801.2125
	General Use	Voice 25.0KHz	397-400	771.4875	801.4875
	General Use	Voice 25.0KHz	441-444	771.7625	801.7625
	General Use	Voice 25.0KHz	489-492	772.0625	802.0625
	General Use	Voice 25.0KHz	569-572	772.5625	802.5625
	General Use	Voice 25.0KHz	613-616	772.8375	802.8375
	General Use	Voice 25.0KHz	669-672	773.1875	803.1875
	General Use	Voice 25.0KHz	713-716	773.4625	803.4625
	General Use	Voice 25.0KHz	793-796	773.9625	803.9625
	General Use	Voice 25.0KHz	833-836	774.2125	804.2125
	General Use	Voice 25.0KHz	901-904	774.6375	804.6375
	State License	Voice 25.0KHz	73-76	769.4625	799.4625
	State License	Voice 25.0KHz	305-308	770.9125	800.9125
	State License	Voice 25.0KHz	653-656	773.0875	803.0875
	State License	Voice 25.0KHz	889-892	774.5625	804.5625
<a href="#"><u>Dorado</u></a>	General Use	Voice 25.0KHz	405-408	771.5375	801.5375
	General Use	Voice 25.0KHz	453-456	771.8375	801.8375
	General Use	Voice 25.0KHz	633-636	772.9625	802.9625



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	State License	Voice 25.0KHz	685-688	773.2875	803.2875
		-	-	-	-
<a href="#">Fajardo</a>	General Use	Voice 25.0KHz	121-124	769.7625	799.7625
	General Use	Voice 25.0KHz	257-260	770.6125	800.6125
	General Use	Voice 25.0KHz	325-328	771.0375	801.0375
	General Use	Voice 25.0KHz	437-440	771.7375	801.7375
	General Use	Voice 25.0KHz	593-596	772.7125	802.7125
	General Use	Voice 25.0KHz	717-720	773.4875	803.4875
	State License	Voice 25.0KHz	185-188	770.1625	800.1625
	State License	Voice 25.0KHz	769-772	773.8125	803.8125
		-	-	-	-
<a href="#">Florida</a>	General Use	Voice 25.0KHz	165-168	770.0375	800.0375
	General Use	Voice 25.0KHz	369-372	771.3125	801.3125
	General Use	Voice 25.0KHz	537-540	772.3625	802.3625
	General Use	Voice 25.0KHz	605-608	772.7875	802.7875
	General Use	Voice 25.0KHz	945-948	774.9125	804.9125
	State License	Voice 25.0KHz	853-856	774.3375	804.3375
		-	-	-	-
<a href="#">Guanica</a>	General Use	Voice 25.0KHz	121-124	769.7625	799.7625
	General Use	Voice 25.0KHz	377-380	771.3625	801.3625
	General Use	Voice 25.0KHz	461-464	771.8875	801.8875
	General Use	Voice 25.0KHz	565-568	772.5375	802.5375
	General Use	Voice 25.0KHz	709-712	773.4375	803.4375
	State License	Voice 25.0KHz	649-652	773.0625	803.0625
	State License	Voice 25.0KHz	849-852	774.3125	804.3125
		-	-	-	-
<a href="#">Guayama</a>	General Use	Voice 25.0KHz	321-324	771.0125	801.0125
	General Use	Voice 25.0KHz	433-436	771.7125	801.7125
	General Use	Voice 25.0KHz	629-632	772.9375	802.9375
	State License	Voice 25.0KHz	273-276	770.7125	800.7125
		-	-	-	-
<a href="#">Guayanilla</a>	General Use	Voice 25.0KHz	281-284	770.7625	800.7625
	General Use	Voice 25.0KHz	357-360	771.2375	801.2375
	General Use	Voice 25.0KHz	401-404	771.5125	801.5125
	General Use	Voice 25.0KHz	581-584	772.6375	802.6375
	General Use	Voice 25.0KHz	793-796	773.9625	803.9625





## Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

	State License	Voice 25.0KHz	773-776	773.8375	803.8375
<a href="#">Guaynabo</a>	General Use	Voice 25.0KHz	365-368	771.2875	801.2875
	General Use	Voice 25.0KHz	589-592	772.6875	802.6875
	General Use	Voice 25.0KHz	701-704	773.3875	803.3875
	State License	Voice 25.0KHz	233-236	770.4625	800.4625
<a href="#">Gurabo</a>	General Use	Voice 25.0KHz	337-340	771.1125	801.1125
	General Use	Voice 25.0KHz	469-472	771.9375	801.9375
	General Use	Voice 25.0KHz	753-756	773.7125	803.7125
	State License	Voice 25.0KHz	649-652	773.0625	803.0625
<a href="#">Hatillo</a>	General Use	Voice 25.0KHz	125-128	769.7875	799.7875
	General Use	Voice 25.0KHz	321-324	771.0125	801.0125
	General Use	Voice 25.0KHz	413-416	771.5875	801.5875
	General Use	Voice 25.0KHz	501-504	772.1375	802.1375
	General Use	Voice 25.0KHz	629-632	772.9375	802.9375
	General Use	Voice 25.0KHz	797-800	773.9875	803.9875
	State License	Voice 25.0KHz	689-692	773.3125	803.3125
<a href="#">Hormigueros</a>	General Use	Voice 25.0KHz	361-364	771.2625	801.2625
	General Use	Voice 25.0KHz	409-412	771.5625	801.5625
	General Use	Voice 25.0KHz	509-512	772.1875	802.1875
	General Use	Voice 25.0KHz	549-552	772.4375	802.4375
	General Use	Voice 25.0KHz	661-664	773.1375	803.1375
	State License	Voice 25.0KHz	809-812	774.0625	804.0625
<a href="#">Humacao</a>	General Use	Voice 25.0KHz	133-136	769.8375	799.8375
	General Use	Voice 25.0KHz	529-532	772.3125	802.3125
	General Use	Voice 25.0KHz	665-668	773.1625	803.1625
	State License	Voice 25.0KHz	225-228	770.4125	800.4125
<a href="#">Isabela</a>	General Use	Voice 25.0KHz	429-432	771.6875	801.6875
	General Use	Voice 25.0KHz	505-508	772.1625	802.1625
	General Use	Voice 25.0KHz	597-600	772.7375	802.7375
	General Use	Voice 25.0KHz	745-748	773.6625	803.6625



## Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

	General Use	Voice 25.0KHz	789-792	773.9375	803.9375
	State License	Voice 25.0KHz	693-696	773.3375	803.3375
	State License	Voice 25.0KHz	925-928	774.7875	804.7875
<a href="#">Jayuya</a>	General Use	Voice 25.0KHz	129-132	769.8125	799.8125
	General Use	Voice 25.0KHz	521-524	772.2625	802.2625
	General Use	Voice 25.0KHz	781-784	773.8875	803.8875
	State License	Voice 25.0KHz	269-272	770.6875	800.6875
<a href="#">Juana Diaz</a>	General Use	Voice 25.0KHz	485-488	772.0375	802.0375
	General Use	Voice 25.0KHz	609-612	772.8125	802.8125
	General Use	Voice 25.0KHz	913-916	774.7125	804.7125
	State License	Voice 25.0KHz	229-232	770.4375	800.4375
<a href="#">Juncos</a>	General Use	Voice 25.0KHz	97-100	769.6125	799.6125
	General Use	Voice 25.0KHz	785-788	773.9125	803.9125
	General Use	Voice 25.0KHz	877-880	774.4875	804.4875
	State License	Voice 25.0KHz	193-196	770.2125	800.2125
<a href="#">Lajas</a>	General Use	Voice 25.0KHz	349-352	771.1875	801.1875
	General Use	Voice 25.0KHz	425-428	771.6625	801.6625
	General Use	Voice 25.0KHz	473-476	771.9625	801.9625
	General Use	Voice 25.0KHz	541-544	772.3875	802.3875
	General Use	Voice 25.0KHz	749-752	773.6875	803.6875
	State License	Voice 25.0KHz	113-116	769.7125	799.7125
<a href="#">Lares</a>	General Use	Voice 25.0KHz	133-136	769.8375	799.8375
	General Use	Voice 25.0KHz	365-368	771.2875	801.2875
	General Use	Voice 25.0KHz	481-484	772.0125	802.0125
	General Use	Voice 25.0KHz	569-572	772.5625	802.5625
	General Use	Voice 25.0KHz	941-944	774.8875	804.8875
	State License	Voice 25.0KHz	153-156	769.9625	799.9625
	State License	Voice 25.0KHz	233-236	770.4625	800.4625
<a href="#">Las Marias</a>	General Use	Voice 25.0KHz	201-204	770.2625	800.2625
	General Use	Voice 25.0KHz	373-376	771.3375	801.3375





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	General Use	Voice 25.0KHz	489-492	772.0625	802.0625
	General Use	Voice 25.0KHz	577-580	772.6125	802.6125
	General Use	Voice 25.0KHz	633-636	772.9625	802.9625
	State License	Voice 25.0KHz	685-688	773.2875	803.2875
<a href="#">Las Piedras</a>	General Use	Voice 25.0KHz	361-364	771.2625	801.2625
	General Use	Voice 25.0KHz	401-404	771.5125	801.5125
	General Use	Voice 25.0KHz	941-944	774.8875	804.8875
	State License	Voice 25.0KHz	265-268	770.6625	800.6625
<a href="#">Loiza</a>	General Use	Voice 25.0KHz	89-92	769.5625	799.5625
	General Use	Voice 25.0KHz	173-176	770.0875	800.0875
	General Use	Voice 25.0KHz	485-488	772.0375	802.0375
	General Use	Voice 25.0KHz	609-612	772.8125	802.8125
	General Use	Voice 25.0KHz	913-916	774.7125	804.7125
	State License	Voice 25.0KHz	189-192	770.1875	800.1875
	State License	Voice 25.0KHz	229-232	770.4375	800.4375
<a href="#">Luquillo</a>	General Use	Voice 25.0KHz	161-164	770.0125	800.0125
	General Use	Voice 25.0KHz	333-336	771.0875	801.0875
	General Use	Voice 25.0KHz	413-416	771.5875	801.5875
	General Use	Voice 25.0KHz	617-620	772.8625	802.8625
	General Use	Voice 25.0KHz	905-908	774.6625	804.6625
	State License	Voice 25.0KHz	149-152	769.9375	799.9375
	State License	Voice 25.0KHz	809-812	774.0625	804.0625
<a href="#">Manati</a>	General Use	Voice 25.0KHz	389-392	771.4375	801.4375
	General Use	Voice 25.0KHz	473-476	771.9625	801.9625
	General Use	Voice 25.0KHz	557-560	772.4875	802.4875
	General Use	Voice 25.0KHz	909-912	774.6875	804.6875
	State License	Voice 25.0KHz	645-648	773.0375	803.0375
<a href="#">Maricao</a>	General Use	Voice 25.0KHz	89-92	769.5625	799.5625
	General Use	Voice 25.0KHz	345-348	771.1625	801.1625
	General Use	Voice 25.0KHz	433-436	771.7125	801.7125
	General Use	Voice 25.0KHz	533-536	772.3375	802.3375



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	General Use	Voice 25.0KHz	705-708	773.4125	803.4125
	State License	Voice 25.0KHz	265-268	770.6625	800.6625
<a href="#">Maunabo</a>	General Use	Voice 25.0KHz	53-56	769.3375	799.3375
	General Use	Voice 25.0KHz	341-344	771.1375	801.1375
	General Use	Voice 25.0KHz	385-388	771.4125	801.4125
	General Use	Voice 25.0KHz	473-476	771.9625	801.9625
	General Use	Voice 25.0KHz	557-560	772.4875	802.4875
	State License	Voice 25.0KHz	645-648	773.0375	803.0375
<a href="#">Mayaguez</a>	General Use	Voice 25.0KHz	289-292	770.8125	800.8125
	General Use	Voice 25.0KHz	397-400	771.4875	801.4875
	General Use	Voice 25.0KHz	669-672	773.1875	803.1875
	General Use	Voice 25.0KHz	713-716	773.4625	803.4625
	General Use	Voice 25.0KHz	837-840	774.2375	804.2375
	General Use	Voice 25.0KHz	901-904	774.6375	804.6375
	State License	Voice 25.0KHz	733-736	773.5875	803.5875
	State License	Voice 25.0KHz	845-848	774.2875	804.2875
	State License	Voice 25.0KHz	893-896	774.5875	804.5875
<a href="#">Moca</a>	General Use	Voice 25.0KHz	13-16	769.0875	799.0875
	General Use	Voice 25.0KHz	241-244	770.5125	800.5125
	General Use	Voice 25.0KHz	353-356	771.2125	801.2125
	General Use	Voice 25.0KHz	449-452	771.8125	801.8125
	General Use	Voice 25.0KHz	497-500	772.1125	802.1125
	General Use	Voice 25.0KHz	701-704	773.3875	803.3875
	State License	Voice 25.0KHz	29-32	769.1875	799.1875
	State License	Voice 25.0KHz	653-656	773.0875	803.0875
<a href="#">Morovis</a>	General Use	Voice 25.0KHz	93-96	769.5875	799.5875
	General Use	Voice 25.0KHz	289-292	770.8125	800.8125
	General Use	Voice 25.0KHz	445-448	771.7875	801.7875
	State License	Voice 25.0KHz	69-72	769.4375	799.4375
<a href="#">Naguabo</a>	General Use	Voice 25.0KHz	81-84	769.5125	799.5125
	General Use	Voice 25.0KHz	581-584	772.6375	802.6375



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	General Use	Voice 25.0KHz	837-840	774.2375	804.2375
	State License	Voice 25.0KHz	693-696	773.3375	803.3375
<a href="#">Naranjito</a>	General Use	Voice 25.0KHz	137-140	769.8625	799.8625
	General Use	Voice 25.0KHz	425-428	771.6625	801.6625
	General Use	Voice 25.0KHz	565-568	772.5375	802.5375
	State License	Voice 25.0KHz	113-116	769.7125	799.7125
<a href="#">Orocovis</a>	General Use	Voice 25.0KHz	41-44	769.2625	799.2625
	General Use	Voice 25.0KHz	601-604	772.7625	802.7625
	General Use	Voice 25.0KHz	861-864	774.3875	804.3875
	State License	Voice 25.0KHz	145-148	769.9125	799.9125
<a href="#">Patillas</a>	General Use	Voice 25.0KHz	125-128	769.7875	799.7875
	General Use	Voice 25.0KHz	369-372	771.3125	801.3125
	General Use	Voice 25.0KHz	537-540	772.3625	802.3625
	State License	Voice 25.0KHz	729-732	773.5625	803.5625
<a href="#">Penuelas</a>	General Use	Voice 25.0KHz	209-212	770.3125	800.3125
	General Use	Voice 25.0KHz	393-396	771.4625	801.4625
	General Use	Voice 25.0KHz	493-496	772.0875	802.0875
	General Use	Voice 25.0KHz	589-592	772.6875	802.6875
	General Use	Voice 25.0KHz	753-756	773.7125	803.7125
	State License	Voice 25.0KHz	933-936	774.8375	804.8375
<a href="#">Ponce</a>	General Use	Voice 25.0KHz	17-20	769.1125	799.1125
	General Use	Voice 25.0KHz	513-516	772.2125	802.2125
	General Use	Voice 25.0KHz	573-576	772.5875	802.5875
	State License	Voice 25.0KHz	25-28	769.1625	799.1625
<a href="#">Quebradillas</a>	General Use	Voice 25.0KHz	81-84	769.5125	799.5125
	General Use	Voice 25.0KHz	253-256	770.5875	800.5875
	General Use	Voice 25.0KHz	329-332	771.0625	801.0625
	General Use	Voice 25.0KHz	561-564	772.5125	802.5125
	General Use	Voice 25.0KHz	637-640	772.9875	802.9875
	General Use	Voice 25.0KHz	821-824	774.1375	804.1375



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	State License	Voice 25.0KHz	73-76	769.4625	799.4625
	State License	Voice 25.0KHz	309-312	770.9375	800.9375
<a href="#">Rincon</a>	General Use	Voice 25.0KHz	165-168	770.0375	800.0375
	General Use	Voice 25.0KHz	325-328	771.0375	801.0375
	General Use	Voice 25.0KHz	389-392	771.4375	801.4375
	General Use	Voice 25.0KHz	529-532	772.3125	802.3125
	General Use	Voice 25.0KHz	585-588	772.6625	802.6625
	General Use	Voice 25.0KHz	945-948	774.9125	804.9125
	State License	Voice 25.0KHz	69-72	769.4375	799.4375
	State License	Voice 25.0KHz	189-192	770.1875	800.1875
<a href="#">Rio Grande</a>	General Use	Voice 25.0KHz	293-296	770.8375	800.8375
	General Use	Voice 25.0KHz	429-432	771.6875	801.6875
	General Use	Voice 25.0KHz	865-868	774.4125	804.4125
	State License	Voice 25.0KHz	33-36	769.2125	799.2125
<a href="#">Sabana Grande</a>	General Use	Voice 25.0KHz	217-220	770.3625	800.3625
	General Use	Voice 25.0KHz	337-340	771.1125	801.1125
	General Use	Voice 25.0KHz	453-456	771.8375	801.8375
	General Use	Voice 25.0KHz	525-528	772.2875	802.2875
	General Use	Voice 25.0KHz	865-868	774.4125	804.4125
	State License	Voice 25.0KHz	185-188	770.1625	800.1625
<a href="#">Salinas</a>	General Use	Voice 25.0KHz	397-400	771.4875	801.4875
	General Use	Voice 25.0KHz	545-548	772.4125	802.4125
	General Use	Voice 25.0KHz	797-800	773.9875	803.9875
	State License	Voice 25.0KHz	109-112	769.6875	799.6875
<a href="#">San German</a>	General Use	Voice 25.0KHz	57-60	769.3625	799.3625
	General Use	Voice 25.0KHz	177-180	770.1125	800.1125
	General Use	Voice 25.0KHz	417-420	771.6125	801.6125
	General Use	Voice 25.0KHz	613-616	772.8375	802.8375
	General Use	Voice 25.0KHz	877-880	774.4875	804.4875
	State License	Voice 25.0KHz	65-68	769.4125	799.4125



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	State License	Voice 25.0KHz	765-768	773.7875	803.7875
<a href="#">San Juan</a>	General Use	Voice 25.0KHz	57-60	769.3625	799.3625
	General Use	Voice 25.0KHz	569-572	772.5625	802.5625
	General Use	Voice 25.0KHz	825-828	774.1625	804.1625
	State License	Voice 25.0KHz	933-936	774.8375	804.8375
<a href="#">San Lorenzo</a>	General Use	Voice 25.0KHz	409-412	771.5625	801.5625
	General Use	Voice 25.0KHz	745-748	773.6625	803.6625
	General Use	Voice 25.0KHz	829-832	774.1875	804.1875
	State License	Voice 25.0KHz	29-32	769.1875	799.1875
<a href="#">San Sebastian</a>	General Use	Voice 25.0KHz	45-48	769.2875	799.2875
	General Use	Voice 25.0KHz	297-300	770.8625	800.8625
	General Use	Voice 25.0KHz	441-444	771.7625	801.7625
	General Use	Voice 25.0KHz	545-548	772.4125	802.4125
	General Use	Voice 25.0KHz	621-624	772.8875	802.8875
	State License	Voice 25.0KHz	193-196	770.2125	800.2125
	State License	Voice 25.0KHz	805-808	774.0375	804.0375
<a href="#">Santa Isabel</a>	General Use	Voice 25.0KHz	81-84	769.5125	799.5125
	General Use	Voice 25.0KHz	429-432	771.6875	801.6875
	General Use	Voice 25.0KHz	505-508	772.1625	802.1625
	General Use	Voice 25.0KHz	637-640	772.9875	802.9875
	General Use	Voice 25.0KHz	837-840	774.2375	804.2375
	State License	Voice 25.0KHz	149-152	769.9375	799.9375
	State License	Voice 25.0KHz	189-192	770.1875	800.1875
	State License	Voice 25.0KHz	693-696	773.3375	803.3375
<a href="#">Toa Alta</a>	General Use	Voice 25.0KHz	13-16	769.0875	799.0875
	General Use	Voice 25.0KHz	461-464	771.8875	801.8875
	General Use	Voice 25.0KHz	577-580	772.6125	802.6125
	State License	Voice 25.0KHz	765-768	773.7875	803.7875
<a href="#">Toa Baja</a>	General Use	Voice 25.0KHz	297-300	770.8625	800.8625
	General Use	Voice 25.0KHz	417-420	771.6125	801.6125



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	General Use	Voice 25.0KHz	541-544	772.3875	802.3875
	General Use	Voice 25.0KHz	793-796	773.9625	803.9625
	State License	Voice 25.0KHz	65-68	769.4125	799.4125
<a href="#">Trujillo Alto</a>	General Use	Voice 25.0KHz	45-48	769.2875	799.2875
	General Use	Voice 25.0KHz	373-376	771.3375	801.3375
	General Use	Voice 25.0KHz	561-564	772.5125	802.5125
	State License	Voice 25.0KHz	73-76	769.4625	799.4625
<a href="#">Utuado</a>	General Use	Voice 25.0KHz	53-56	769.3375	799.3375
	General Use	Voice 25.0KHz	833-836	774.2125	804.2125
	General Use	Voice 25.0KHz	873-876	774.4625	804.4625
	State License	Voice 25.0KHz	105-108	769.6625	799.6625
<a href="#">Vega Alta</a>	General Use	Voice 25.0KHz	49-52	769.3125	799.3125
	General Use	Voice 25.0KHz	177-180	770.1125	800.1125
	General Use	Voice 25.0KHz	381-384	771.3875	801.3875
	General Use	Voice 25.0KHz	509-512	772.1875	802.1875
	General Use	Voice 25.0KHz	677-680	773.2375	803.2375
	State License	Voice 25.0KHz	725-728	773.5375	803.5375
<a href="#">Vega Baja</a>	General Use	Voice 25.0KHz	121-124	769.7625	799.7625
	General Use	Voice 25.0KHz	325-328	771.0375	801.0375
	General Use	Voice 25.0KHz	593-596	772.7125	802.7125
	State License	Voice 25.0KHz	185-188	770.1625	800.1625
<a href="#">Vieques</a>	General Use	Voice 25.0KHz	17-20	769.1125	799.1125
	General Use	Voice 25.0KHz	169-172	770.0625	800.0625
	General Use	Voice 25.0KHz	253-256	770.5875	800.5875
	General Use	Voice 25.0KHz	297-300	770.8625	800.8625
	General Use	Voice 25.0KHz	357-360	771.2375	801.2375
	General Use	Voice 25.0KHz	405-408	771.5375	801.5375
	General Use	Voice 25.0KHz	453-456	771.8375	801.8375
	General Use	Voice 25.0KHz	497-500	772.1125	802.1125
	General Use	Voice 25.0KHz	573-576	772.5875	802.5875
	General Use	Voice 25.0KHz	625-628	772.9125	802.9125





## Region 47 – 700 MHz Regional Planning Committee *Commonwealth of Puerto Rico*

	General Use	Voice 25.0KHz	677-680	773.2375	803.2375
	General Use	Voice 25.0KHz	741-744	773.6375	803.6375
	General Use	Voice 25.0KHz	781-784	773.8875	803.8875
	General Use	Voice 25.0KHz	869-872	774.4375	804.4375
	State License	Voice 25.0KHz	25-28	769.1625	799.1625
	State License	Voice 25.0KHz	849-852	774.3125	804.3125
<a href="#">Villalba</a>	General Use	Voice 25.0KHz	169-172	770.0625	800.0625
	General Use	Voice 25.0KHz	457-460	771.8625	801.8625
	General Use	Voice 25.0KHz	625-628	772.9125	802.9125
	General Use	Voice 25.0KHz	741-744	773.6375	803.6375
	General Use	Voice 25.0KHz	869-872	774.4375	804.4375
	State License	Voice 25.0KHz	305-308	770.9125	800.9125
<a href="#">Yabucoa</a>	General Use	Voice 25.0KHz	165-168	770.0375	800.0375
	General Use	Voice 25.0KHz	393-396	771.4625	801.4625
	General Use	Voice 25.0KHz	465-468	771.9125	801.9125
	General Use	Voice 25.0KHz	673-676	773.2125	803.2125
	General Use	Voice 25.0KHz	909-912	774.6875	804.6875
	State License	Voice 25.0KHz	105-108	769.6625	799.6625
<a href="#">Yauco</a>	General Use	Voice 25.0KHz	97-100	769.6125	799.6125
	General Use	Voice 25.0KHz	161-164	770.0125	800.0125
	General Use	Voice 25.0KHz	293-296	770.8375	800.8375
	General Use	Voice 25.0KHz	385-388	771.4125	801.4125
	General Use	Voice 25.0KHz	785-788	773.9125	803.9125
	State License	Voice 25.0KHz	33-36	769.2125	799.2125
	State License	Voice 25.0KHz	225-228	770.4125	800.4125



# **Region 47 – 700 MHz Regional Planning Committee**

*Commonwealth of Puerto Rico*

## **Appendix H – Dispute Resolution**

### **INTRODUCTION**

The Regional Committee is established under FCC 90.527 of the FCC's rules and regulations which came into effect on June 22, 2001. It is an independent Committee apart from the Federal Communications Commission with authority to evaluate application for public safety uses of the spectrum allocated under FCC Docket 96-86. In addition, appeals from decisions made with respect to a variety of matters regulated by the Regional Committee will be heard. The formal requirements of the appeal process are set out below.

In order to ensure that the appeal process is open and understandable to the public, the Regional Committee has developed this procedure. Those involved in the appeal process can expect the Committee and its members to follow the procedures (as may be amended from time to time). Where any matter arises during the course of an appeal that is not dealt with in this document, the Committee will do whatever is necessary to enable it to adjudicate fairly, effectively and completely on the appeal. In addition, the Committee may dispense with compliance with any part or all of a particular procedure where it is appropriate in the circumstances. As the Committee gains experience, it will refine and, if necessary, change its policies. Any changes made to the procedure will require a modification to the Regional Plan and will be made available to the public.

The Regional Committee will make every effort to process appeals in a timely fashion and issue decisions expeditiously.

### **Appeals Committee**

#### **Members**

The Regional Chair may organize the Committee into Sub-Committees, each comprised of one or more members. The Appeals Sub-Committee is one of those Sub-Committees.

Where an appeal is scheduled to be heard by this Sub-Committee the chair is determined as follows:

- (a) If the chair of the Committee is on the Sub-Committee, he/she will be the chair;
- (b) If the chair of the Committee is not on the Sub-Committee but the vice-chair is, the vice-





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chair will be the chair; and

- (c) If neither the chair nor the vice-chair is on the Sub-Committee, the Regional Committee will designate one of the members to be the chair.

### **Withdrawal or Disqualification of a Committee Member on the Grounds of Bias**

Where the chair or a Committee member becomes aware of any facts that would lead an informed person, viewing the matter reasonably and practically, to conclude that a member, whether consciously or unconsciously, would not decide a matter fairly, the member will be prohibited from conducting the appeal unless consent is obtained from all parties to continue. In addition, any party to an appeal may challenge a member on the basis of real or a reasonable apprehension of bias.

### **Correspondence (Communicating) with the Committee**

To ensure the appeal process is kept open and fair to the participants, any correspondence to the Regional Committee must be sent to the Chair and be copied to all other Committee members and other parties to the appeal, if applicable.

Committee members will not contact a party on any matter relevant to the merits of the appeal, unless that member puts all other parties on notice and gives them an opportunity to participate. The appeal process is public in nature and all meetings regarding the appeal will be open to the public.

## **THE APPEAL PROCESS**

### **Filing an Appeal**

#### **What can be Appealed**

The Committee hears appeals from a determination or allocation and shall include the following: i.e. number of channels assigned, ranking in the assignment matrix, interference, or any other criteria that the region shall establish.

#### **Who can Appeal**

An official of the entity who filed the original application to the Regional Committee must be the



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person who files the appeal on behalf of the entity.

### **How to Appeal**

A notice of appeal must be served upon the Regional Committee. The notice of appeal may be "delivered" by mail, courier, or hand delivered to the office of the Chair and Members of the Committee as listed in the Official Membership List. The Committee will also accept a notice of appeal by facsimile to the Chair and Secretary with the original copy of the notice of appeal served as indicated above.

Certain things must be included in a notice of appeal for it to be accepted. The notice of appeal **must** include:

1. The name and address of the appellant;
2. The name of the person, if any, making the request for an appeal on behalf of the appellant;
3. The address for service of the appellant;
4. The grounds for appeal (a detailed explanation of the appellant's objections to the determination - describe errors in the decision);
5. A description of the relief requested (What do you want the Committee to order at the end of the appeal?);
6. The signature of the appellant or the appellant's representative.

### **Time Limit for Filing the Appeal**

To appeal a determination or allocation the entity that is subject to the determination must deliver a notice of appeal **within three weeks** after receiving the decision. If a notice of appeal is not delivered within the time required, the right to an appeal is lost. However, the Committee is allowed to extend the deadline, either before or after its expiration based upon a majority plus one vote of the Committee.

### **Extension of Time to Appeal**

The Committee has the discretion to extend the time to appeal either before or after the three week deadline. A request for an extension should be made to the Committee, in writing, and



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include the reasons for the delay in filing the notice of appeal and any other reasons which the requester believes support the granting of an extension of time to file the appeal. A request for an extension should accompany the notice of appeal.

In deciding whether to grant an extension, the Committee will consider whether fairness requires an extension. The Committee will take into account the length of the delay, the adequacy of the reasons for the delay, the prejudice to those affected by the delay and any impacts that may result from an extension. Other factors not identified could be relevant depending on the circumstances of the particular case.

### **Rejection of a Notice of Appeal**

The Committee may reject a notice of appeal if:

- (a) it is determined that the appellant does not have standing to appeal; or
- (b) the Committee does not have jurisdiction over the subject matter or the remedy sought.

Before a notice of appeal is rejected, the Committee will inform the appellant of this in writing, with reasons, and give the appellant a three-week opportunity to make submissions and any potential parties with an opportunity to respond.

### **Adding Parties to the Appeal**

In addition to the parties mentioned above, the Committee has the discretion to add any other person who may be “affected” by the appeal as a party to the appeal. Anyone wanting to obtain party status should make a written request to the Committee as early as possible. The written request should contain the following information:

- a) The name, address, telephone and fax number, if any, of the person submitting the request;
- b) A detailed description of how the person is “affected” by the notice of appeal and
- c) The reasons why the person should be included in the appeal; and
- d) The signature of the person submitting the request.



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### **Intervener Status**

The Committee may also invite or permit someone to participate in a hearing as an intervener. Interveners are generally individuals or groups that do not meet the criteria to become a party (i.e. “may be affected by the appeal”) but have sufficient interest in, or some relevant expertise or view in relation to the subject matter of the appeal.

Someone wanting to take part in an appeal as an intervener should send a written request to the Committee. The written request should contain the following information: (to be determined by RPC)

Prior to inviting or permitting a person to participate in a proceeding as an intervener, or deciding on the extent of that participation, the Committee will provide all parties with an opportunity to make representations if they wish to do so.

### **Type of Appeal (written or oral) Hearing**

An appeal may be conducted by way of written submissions, oral hearing or a combination of both. The Committee will determine the appropriate type of appeal after a complete notice of appeal has been received.

The Committee will normally conduct an oral hearing although it may order that a hearing proceed by way of written submissions in certain cases. Where a hearing by written submissions is being considered by the Committee, the Committee may request input from the parties.

### **Burden of Proof**

The general rule is that the burden or responsibility for proving a fact is on the person who asserts it.

### **Notification of Expert Evidence**

The Committee requires any party that intends to present expert evidence at a hearing to provide



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the Committee, and all other parties to the appeal, with reasonable advance notice that an expert will be called to give an opinion. The notice should include a brief statement of the expert's qualifications and areas of expertise.

If a party intends to produce, at a hearing, a written statement or report prepared by an expert, a copy of the statement or report should be provided to the Committee and all parties to the appeal within a reasonable time before the statement or report is given in evidence. Unless there are compelling reasons for later admission, expert reports should be distributed 30 days prior to the hearing date.

### **Documents**

If a party will be referring to a document that was not provided to the Committee and all parties prior to the hearing, sufficient copies of the document must be brought to the hearing for the Committee and all other parties.

### **APPEALING THE APPEALS SUBCOMMITTEE'S DECISION**

If a party is not satisfied with the decision of the Region's Appeals Subcommittee's Decision, he or she can appeal that decision to the 700 MHz National Planning Oversight Committee.



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## **Appendix I – National Coordinating Committee “Check-off” Sheet**

Regional Plan Element	Check	Rule Section	See Section #
Cover letter referencing Docket # 02-378 and identifying the document as the 700 MHz Regional Plan for the Region		Public Notice DA- 02-3497	
Name, Title, address, phone number, agency affiliation, email address of Chair		90.527(a)(1)	
Names, agency affiliations, voting status, mailing addresses, phone numbers, email addresses (if available) of other RPC officers		90.527(a)(1)	
A summary of the major elements of the plan and an explanation of how all eligible entities w/in the Region were given an opportunity to participate and have their positions heard and considered fairly.			
Definition of the Region and its boundaries, a list of the counties and cities within the boundaries		90.527(a)(2)	
Overview of public safety entities that have jurisdiction within or over any or all portions of the Region (state agencies, federal agencies, etc.)		90.527(a)(2)	
Description of the types of public safety, law enforcement, government, public service, or other entities (federal, municipality, regional, city, town etc.) that are included in the Region.		90.527(a)(2)	
The dates and publications in which the meetings were announced		90.527(a)(2)	
municipality		90.527(a)(2)	
The dates and websites on which the meetings were announced		90.527(a)(2)	
A description of the process by which comments were solicited from all eligible parties		90.527(a)(2)	
Summary of all comments and submissions obtained through the process		90.527(a)(2)	
A description of the process used to consider comments submitted from concerned parties		90.527(a)(2)	
The guidelines and procedures for operation of the RPC		90.527(a)(2)	
The procedures for frequency coordination		90.527(a)(2)	
Guidelines and procedures for protection of incumbent TV/DTV stations within the Region or near the Region's border during the DTV transition period		90.527(a)(2)	
A copy of the RPC's bylaws		90.527(a)(2)	
The technical procedures for requesting channels		90.527(a)(3)	
An overview of the application process		90.527(a)(3)	
An explanation of how the RPC decided between competing agencies when more requests for spectrum were received than		90.527(a)(3)	



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could be filled. What criteria was used to evaluate competing applications to determine which request was granted?

An explanation of how the RPC decided how the spectrum would be allocated, e.g. by population; how applications were solicited, e.g. on a first-come, first-served basis or only during certain filing windows. An explanation of channel recovery methods will be applied w/in the Region.

90.527(a)(3)

A description of how the applications are handled and reviewed, including an explanation of how the RPC applies the evaluation criteria listed in item 3

90.527(a)(4)

Spectrum utilization agreements with Region 48

90.527(a)(4)

If the State bears responsibility for administering the interoperability channels, the Regional Plan must indicate how the Region will interact with the SIEC or similar body. If the RPC is responsible for administering the I/O channels, see the check points below the bold type.

90.527(a)(5)

Description of the pre-coordination allotment method used at the Region's borders

90.525(b)

Concurrence from the Chairs of the adjacent Regions **OR** evidence that the RPC used the NCC Implementation Subcommittee's 'pre-planning proposal' to reserve some portion of the 700 MHz spectrum at the RPC borders for the adjacent Region(s).

90.527(a)(5)

If any of the adjacent Regions have not yet convened or selected a convener, the Plan must include a waiver of 90.527(a)(5)

90.527(a)(5)

An explanation of how the RPC encouraged spectrum re-use and promoted spectrally efficient technologies to make the most efficient use of the spectrum

90.527(a)(5)

An explanation of how the RPC will maintain the pre-coordination database, provide opportunities for future modifications of the plan  
Inter-Regional Dispute Resolution agreements signed by the Chair of the Adjacent Region(s)

90.527(a)(6)

90.527(a)(7)

A certification by the RPC chair that all RPC meetings were open to the public

90.527(a)(7)

Signature of the RPC chair

90.527(a)(8)

**The following items would constitute a Section that would be required only if the RPC had assumed responsibility for administering the 700 MHz Interoperability Channels**

90.527(a)(8)

If the RPC bears responsibility for administering the interoperability channels, Section 9 of the Regional Plan must include: 1) a list of the interoperability channels; 2) a definition of when and where the two calling channels are to be used, including monitoring requirements; 3) description of how the interoperability channels will be deployed and used in the Region, including procedures to





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extract interoperability channels being used in the trunked mode when necessary; channel nomenclature, minimum channel quantity, channel access parameters; 4) priority access levels to be used on the interoperability channels

Description of existing interoperability contracts, compacts, mutual aid agreements, etc.	90.525(b)
Description of the effect of the addition of 700 MHz channels and interoperability requirements on existing plans	90.525 (b)
Descriptions of the Region's interoperability plans and interoperability requirements	90.525(b) 90.525(b)



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### Appendix J – Region 47 Standard Propagation Model

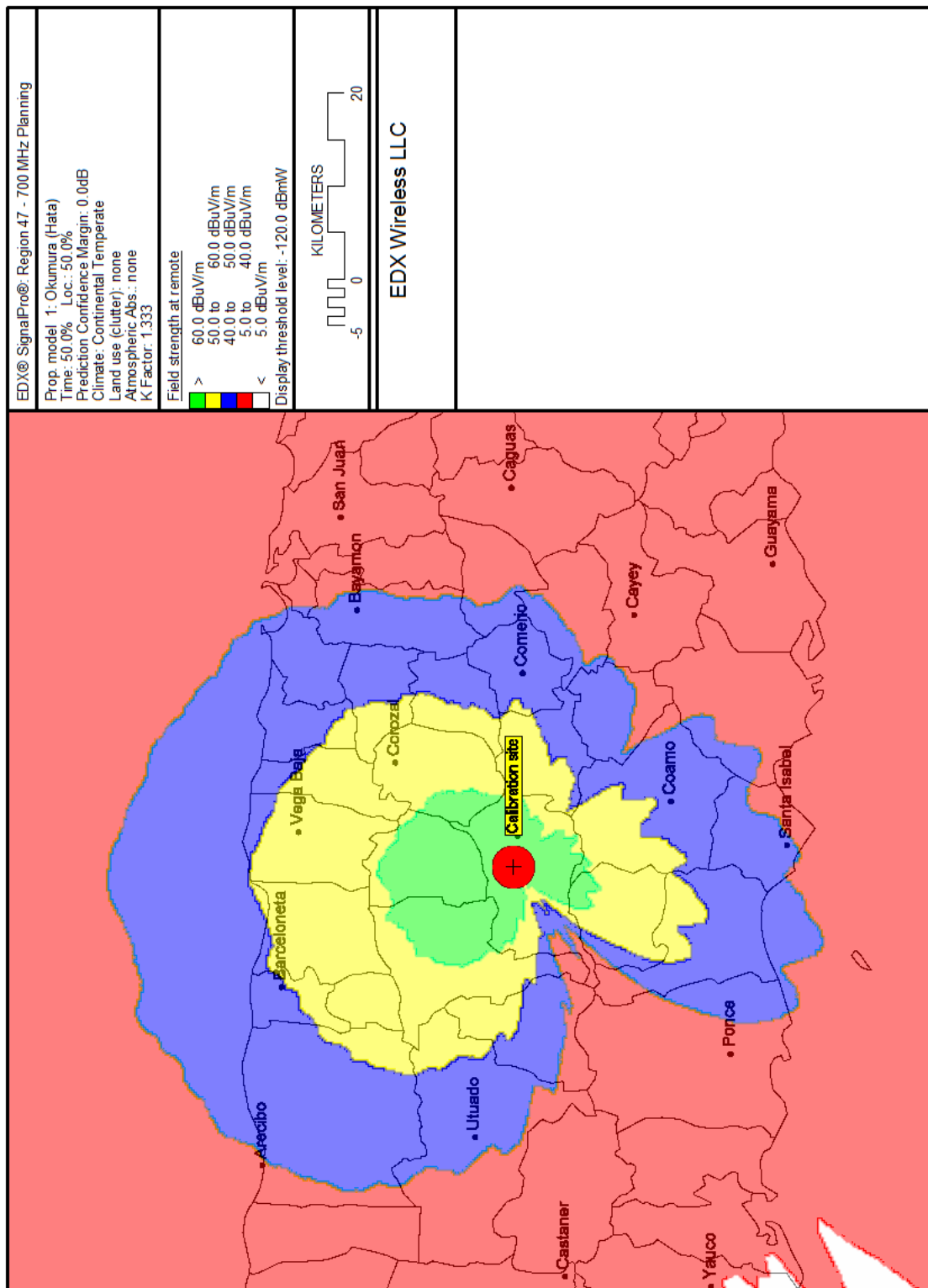
Region 47 understand that there are many differing computer modeling software products that an applicant can utilize to perform the required coverage area restriction calculations, as well as service and interference calculations to other systems. In order not to limit the applicant in the selection of a propagation software product, while still maintaining a quality control on the documents submitted to the Region, we have established a standard propagation model.

The applicant must define the propagation software that is utilized in the application process. This software must be commercially available and have received peer review and be a generally accepted propagation modeling tool. Utilizing the following technical parameters the application will submit a calibration propagation which shows general agreements to the following plot.

Coordinates:	18°13'52" N / 66°25'26 W
Site elevation:	843.8 m
Antenna radiation center:	30 m
Antenna type:	Omni-directional (DB806D or equivalent)
Effective Radiated Power:	100 watts
Prop Model:	Okumura-Hata- Davidson
Reliability: median	F(50,50)
Environmental:	Suburban no diffraction
Frequency:	770 MHz



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Region 47 700 MHz Plan



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### **Appendix K – Inter-Regional Dispute Procedures**

See next page for a sample of inter-agency coordination  
procedures and agreement



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## Inter-Regional Coordination Procedures *and* *Procedures for Resolution of Disputes* *That May Arise Under FCC Approved Plans*

### *I. Coordination Procedures*

#### **I. INTRODUCTION**

1. This is a mutually agreed upon Inter-Regional Coordination Procedures Agreement (Agreement) by and between the following 700 MHz Regional Planning Committees, [list Regions here].

#### **II. INTER-REGIONAL COORDINATION AGREEMENT**

2. The following is the specific procedure for inter-regional coordination which has been agreed upon by Regions 47 and 48, and which will be used by the Regions to coordinate with adjacent Regional Planning Committees.
  - a. An application filing window is opened or the Region announces that it is prepared to begin accepting applications on a first-come/first-served basis.
  - b. Applications by eligible entities are accepted.
  - c. An application filing window (if this procedure is being used) is closed after appropriate time interval.
  - d. Intra-regional review and coordination takes place, including a technical review resulting in assignment of channels.
  - e. After intra-regional review, a copy of those frequency-specific applications requiring adjacent Region approval, including a definition statement of proposed service area, shall then be forwarded to the adjacent Region for review.<sup>12</sup> This information will be sent to the adjacent Regional chairperson using the CAPRAD database.

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<sup>12</sup> If an applicant's proposed service area extends into an adjacent Public Safety Region(s), the application must be approved by the affected Region(s). Service area shall normally be defined as the area included within the geographical boundary of the applicant, plus three (3) miles. Other definitions of service area shall be justified with an accompanying *Memorandum of Understanding (MOU)* or other application documentation between agencies, i.e. mutual aid agreements.



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- f. The adjacent Region reviews the application. If the application is approved, a letter of concurrence shall be sent, via the CAPRAD database, to the initiating Regional chairperson within thirty (30) calendar days.

### *II. Dispute Resolution*

- (1) If the adjacent Region(s) cannot approve the request, the adjacent Region shall document the reasons for partial or non-concurrence, and respond within 10 (Ten) calendar days via email. If the applying Region cannot modify the application to satisfy the objections of the adjacent Region then, a working group comprised of representatives of the two Regions shall be convened within thirty (30) calendar days to attempt to resolve the dispute. The working group shall then report its findings within thirty (30) calendar days to the Regional chairperson's email (CAPRAD database). Findings may include, but not be limited to:
- (i) Unconditional concurrence;
  - (ii) Conditional concurrence contingent upon modification of applicant's technical parameters; or
  - (iii) Partial or total denial of proposed frequencies due to inability to meet co-channel/adjacent channel interference free protection to existing licensees within the adjacent Region.
- (2) If the Inter-Regional Working Group cannot resolve the dispute, then the matter shall be forwarded for evaluation to the National Plan Oversight Committee (NPOC)<sup>13</sup>, of the National Public Safety Telecommunications Council. Each Region involved in the dispute shall include a detailed explanation of its position, including engineering studies and any other technical information deemed relevant. The NPOC will, within thirty (30) calendar days, report its recommendation(s) to the Regional chairpersons via the CAPRAD database. The

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<sup>13</sup> The Regional Plan Oversight Committee (RPOC) is a committee within the National Public Safety Telecommunications Council (NPSTC) established to arbitrate disputes between 700 MHz Regions that cannot be resolved by the impacted Regions.



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NPOC's decision may support either of the disputing Regions or it may develop a proposal that it deems mutually advantageous to each disputing Region.

- a. Where adjacent Region concurrence has been secured, and the channel assignments would result in no change to the Region's currently Commission approved channel assignment matrix. The initiating Region may then advise the applicant(s) that their application may be forwarded to a frequency coordinator for processing and filing with the Commission.
- b. Where adjacent Region concurrence has been secured, and the channel assignments would result in a change to the Region's currently Commission approved channel assignment matrix, then the initiating Region shall file with the Commission a *Petition to Amend* their current Regional plan's frequency matrix, reflecting the new channel assignments, with a copy of the *Petition* sent to the adjacent Regional chairperson(s).
- c. Upon Commission issuance of an *Order* adopting the amended channel assignment matrix, the initiating Regional chairperson will send a courtesy copy of the *Order* to the adjacent Regional chairperson(s) and may then advise the applicant(s) that they may forward their applications to the frequency coordinator for processing and filing with the Commission.





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### III. CONCLUSION

3. IN AGREEMENT HERETO, Regions [ 47 and 48 ] do hereunto set their signatures the day and year first above written.

Respectfully,

[All signatories to agreement]

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Date: \_\_\_\_\_