Report of the Implementation Subcommittee
To the Steering Committee of
The National Coordination Committee (NCC)

May 10, 2001

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I. IMPLEMENTATION SUBCOMMITTEE REPORT TO NCC STEERING COMMITTEE

EXECUTIVE SUMMARY

The Implementation Subcommittee was formed, within the National Coordination Committee, to develop a National Plan process to coordinate the assignment of the new spectrum in a similar fashion to the national plan process that was developed for the 821MHz allocation. In order to effectively allocate this spectrum, specific guidelines had to be developed that would provide clear direction to the regions to assist in formulating their plans.

Of primary concern to the Implementation Subcommittee was the addition of competition in the frequency advisory process. In the 821 MHz allocation, there was only one frequency coordinator. Increasing the number of coordinators has added an additional level of complexity to the coordination process. The Subcommittee recommends that each region use a common or centralized database to allot channels for planning; and that all the certified coordinators use the common database as a coordination tool. This Subcommittee has consistently recommended that the Commission require the use of a common database. Specifically, the Subcommittee recommends that the National Law Enforcement and Corrections Technology Center (NLECTC) database be used during the pre-coordination and coordination process.

The Technology Policy Working Group, in conjunction with NPSTC, developed a pre-planning and coordination process illustrated by Appendices H & I. The process was designed to utilize the NLECTC database to record the initial allotments made by the regional committees and subsequently coordinate and record frequency assignments made by the frequency coordinators.

The subcommittee recommended that specific geographic areas such as counties allocate channels on a population basis. The pre-coordination database becomes extremely important along a region's borders. To successfully coordinate applications, the frequency coordinators must have access to the adjacent region's plans and allotments. Use of this database will help regions avoid conflict along the borders. Additionally, the frequency coordinators will also use the common database to record assignments during the coordination process.

The NPSPAC National Plan was reviewed and used as a basis for the 700 MHz plan developed by this Subcommittee. While the NPSPAC National Plan was a good starting point, there were areas that could be improved. These were identified and addressed during the first NCC meetings. The subcommittee determined that taking advantage of the common database could enhance the approval, coordination and information exchange process. The notification process of the 1980's also required updating to include the use of the Internet and e-mail.

Building on the work done by NPSPAC in the previous release of spectrum, the subcommittee developed consistent guidelines and standards specifically designed to allow the regions to organize quickly once the spectrum became available. Implementation Subcommittee members also expressed concern that the FCC process to review and approve initial Regional Plans and

any subsequent Plan modification was lengthy and cumbersome. To this end, the subcommittee made recommendations that we believe will streamline the regional plan process in all phases.

A recurring concern throughout the NCC meetings was the lack of funding to support the regional plan process. Regional Planning Committees are typically not funded and are comprised of volunteers from public safety agencies acting as representatives of their respective agencies. Funding for the required mailings, advertisements and meetings was difficult if not impossible to acquire and usually the result of one or two particular agencies' generosity. The Funding Workgroup, in conjunction with the National Institute of Justice's NLECTC group, was successful in securing funding for the development of the regional plans.

The subcommittee also recommended the formation of an oversight group, the National Plan Oversight Committee (NPOC). The recommendation suggests a membership that includes the FCC authorized frequency advisors and some number of regional chairs. The committee will monitor the progress of the Regional Planning Committees, report progress to the FCC, assist the regions in preparing regional plans where necessary and monitor the progress of the Digital TV transition. Additionally, the NPOC would be tasked with assisting regions in resolving disputes between regions.

Although there were few disputes during the NPSPAC planning process, the subcommittee considered the development of a dispute resolution process an important part of the planning process. Included in this report is a recommended dispute resolution procedure. The dispute resolution process provides a vehicle for an agency within the region to challenge a region's decision.

The Commission needs to establish an efficient method of disseminating the Regional Planning Guidelines and other informational documents prepared by the Implementation Subcommittee. The subcommittee further recommends that the Commission publish the appropriate NCC documents on the FCC's Public Safety Division web page of the Commission's website. There are nearly twenty regions currently engaged in the process of developing their regional plans.

Recognizing that there will be various technologies available for use in the 700MHz band, the Implementation Subcommittee was careful not to be technology specific in any of its documents. The Regional Plans can be developed using the Guidelines and other informational documents without regard to technology. However, it is important to note that as regions form and channels are assigned, it will be essential to record the type of system planned to allow the coordinators to assign the appropriate channels with the correct spacing. The NLECTEC Database, currently in development, will capture system information and will allow the coordinators to enter technology specific information to assist in the coordination process.

The Implementation Subcommittee believes that the documents contained herein will provide the regions with a strong foundation upon which they can develop a comprehensive plan. The Guidelines are such that they can be taken and used with minimum modifications should a region elect to do so. If the region requires a more extensive plan the Guidelines will provide an excellent foundation. The Implementation Subcommittee recommends that the NCC Steering Committee forward this report and Regional Planning documents to the FCC. We further

recommend that the Steering Committee urge the Commission to issue a Public Notice endorsing the use of the National Plan Guidelines and Template for regional planning.

II. IMPLEMENTATION SUBCOMMITTEE'S RECOMMENDATIONS

RECOMMENDATION #1:
Use of the NLECTC Database

The Implementation Subcommittee recommends that the FCC require the use of the NLECTC database by RPCs for pre-planning, and review of adjacent Region's plans. The frequency coordinators have all agreed to use the NLECTC database application as a common coordination tool. The database should be used as the repository for all additional information required by the frequency coordinators (see 90.175(a) and portions of 90.176) such as receiver specific and technology specific parameters. Given that there will be many different types of technologies available in the 700 MHz band, it is extremely important that there be a centralized repository for technical information specific to each system deployed. Such information is vital to the frequency coordination process, particularly as the spectrum become increasingly populated.

In addition to the NLECTC database, the Subcommittee recommends that all frequency coordinators use a frequency coordination program that utilizes terrain-based propagation modeling encompassing the methodologies of the current version of TIA/EIA TSB-88.

The Implementation Subcommittee feels that the NLECTC database use should be required of all 700 MHz Regional Planning Committees, and by all FCC-certified Public Safety coordinators. Major difficulties in maximizing spectrum efficiency will be encountered unless the RPCs and FACs use the database for pre-planning and frequency coordination. Currently, all the FCC-certified public safety frequency coordinators support use of the NLECTC database. If the FCC certifies additional public safety coordinators, the Implementation Subcommittee recommends that use of the NLECTC database be imposed as a condition for FCC certification of new coordination applicants. The participating public safety members of the NCC strongly support this recommendation. Many NCC members have commented that unless the Commission requires use of the NLECTC database, one non-compliant region could create problems for all the adjacent regions. For instance, if Iowa were to decide that it would not use the NLECTC database, Iowa's decision would impact seven adjacent regions. All seven adjacent regions would be greatly impacted in obtaining approval for Plan modifications.

The Implementation Subcommittee (as well as the other NCC Subcommittees) strongly supports mandatory use of the NLECTC database. The subcommittee believes that once the NLECTC database is functional, in use by the FACs and existing RPCs, with funding earmarked for its continued maintenance and operation, the FCC will have the information it needs to mandate its use.

RECOMMENDATION #2
Proposals to expedite FCC approval of initial 700 MHz Regional Plans and subsequent modifications

The Implementation Subcommittee recommends that the FCC adopt procedures to expedite the Regional Plan approval process.

One of the major identified problems associated with the 821 Regional Planning Process was the lengthy amount of time required for the Commission to review a region's plan. When the 821 Plans were submitted, it regularly took upwards of a year to complete the FCC review process.

The Implementation Subcommittee believes that the FCC should streamline the RPC approval process.

First, the Commission should place the Plans on Public Notice immediately upon receipt. Public Notice timeframe should be limited to a maximum of 30 days. During the Public Notice period, the Commission should perform a parallel review of the Plan.

If no comments on the Plan have been received during the Public Notice period it should then be approved automatically. Only if comments are received, would a fifteen day Reply Comment period be required. If any issues raised in the Comment and Reply Comment period are satisfactorily resolved the Plan should then be approved.

RPC modifications need not be placed on Public Notice if subsequent assignments are made by a certified frequency coordinator in accordance with the approved Regional Plan and recorded in the NLECTC database. Modifications to Plans meeting these criteria should be considered an implementation of the approved plan and be granted upon verification of frequency coordination.

Modifications affecting counties/assignments only in the Region's interior would not affect adjacent Regions and therefore, should be exempt from both adjacent region concurrence and the need for Public Notice. Such modifications should be classified as permissive changes requiring only FCC notification.

Adjacent Region approval is required only if the Plan modification would affect allotments in the adjacent region's approved plan. Where adjacent regions are affected, and concurrence is received, Public Notice should not be required. FCC approval of modifications with concurrence should occur within 30 days of receipt.

RECOMMENDATION #3:
700 MHz National Planning Oversight Committee

Disputes over frequency assignments can arise within regions as well as between two adjacent regions. Disputes within regions can involve disagreements over how an applicant was ranked using the matrix criteria. Disputes between regions can arise from lack of available spectrum to satisfy applicants in both regions.

To provide a vehicle to mediate and resolve disputes at the local Regional level, the Implementation Subcommittee has developed a dispute resolution process. The Implementation Subcommittee believes that the dispute resolution process defined in Appendix D (IM-00028A-20010322, will provide a mechanism to resolve the majority of disputes arising both between applicants within a region and between adjoining regions.

For those cases where the local dispute resolution process cannot solve the problem, another venue is needed. The Implementation Subcommittee envisions a 700 MHz National Planning Oversight Committee (NPOC) created to be an arbitrator for those conflicts that cannot be resolved at the regional level. The NPOC would be comprised of five or more (odd-numbered) members drawn from the Chairs of the 700 MHz RPCs as well as representatives from the FCC-certified public safety frequency advisory committees.

The NPOC would mediate and resolve disputes between regions such as disputes over allotments and disputes over assignments. The NPOC will entertain appeals of the decisions of the Region's appeals subcommittee. In all matters he FCC remains the final authority.

The NPOC will also monitor the Regional Planning process, report progress to the FCC, assist the regions in preparing regional plans where necessary and monitor the progress of the Digital TV transition.

RECOMMENDATION #4
PRE-PLANNING PROCESS PROPOSAL

In the 821 Planning process, Regions that did not immediately form and develop their regional plan found there was little spectrum available near the regional borders because the adjacent region had already assigned that spectrum.

The Implementation Subcommittee recommends that all Regions use the following pre-planning methodology to facilitate coordination with adjacent Regions. This procedure will provide a spectrum allocation for adjacent Regions that do not immediately form a Committee.

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

If a Region has not yet exhausted its 821 MHz allotment, the 700 MHz RPC should work with the 821 MHz RPC to first encourage utilization of the 821 MHz allocation.

RECOMMENDATION #5:
The Handling of Unformed Regions

The 821 Regions were given a deadline of five years after the 821 allocation to form and write their Regional Plan.

While the Commission has imposed a deadline of 12/31/01 on States to file for their 2.4 MHz state license, there is no time limit for 700 MHz regions to form and develop a plan for use of the General Use channels.

The Implementation Subcommittee believes that a deadline is useful. If a Region has not formed or has not written its Regional Plan by 12/31/2004, the FCC-certified public safety frequency coordinators, the 700 MHz Regional Chairpersons of the adjacent regions, or the 700 MHz National Planning Oversight Committee (or a combination thereof) shall take responsibility for developing that unformed Region's plan. If a 700 MHz Region has not formed, the adjacent 700 MHz Region is not required to obtain that Region's written approval of its 700 MHz Plan so long as it has used the pre-planning procedure outlined in Recommendation #4. The pre-planning process will pre-allot spectrum along the regional borders to protect the interests of unformed adjacent regions until they can develop a regional plan.

RECOMMENDATION #6:
Periodic Re-Evaluation of Allotments

To accommodate population changes, changing technologies, and to maximize spectrum efficiency, the Implementation Subcommittee recommends a periodic re-evaluation of allotments and assignments. If the frequencies have not been coordinated (assigned to an entity) after five years, the allotment should be reviewed.

This process will ensure that agencies within a Region do not 'warehouse' spectrum indefinitely thereby blocking other agencies who have an immediate spectrum need and the funding to implement a system without delay. This would also provide a mechanism to periodically review all unconstructed frequency assignments.

RECOMMENDATION #7
Support of Interoperability Subcommittee Recommendations

The Interoperability Subcommittee developed detailed recommendations for use of the interoperability Channels. The Implementation Subcommittee fully supports the recommendations of the I/O subcommittee and strongly urges the 700 MHz RPCs to follow these guidelines. Note Appendix A for I/O channel assignments and technical parameters.

III. REPORTS FROM WORKING GROUPS

WORKING GROUP 1 – The Writing Group

The Writing Group, headed by Implementation Subcommittee Chair, Ted Dempsey, met multiple times during 2000 and 2001 to draft the Implementation Subcommittee's Reports to the Steering Committee including draft bylaws, dispute resolution process, and the capital funding report. WG1 developed the recommendations listed in this document from input received from Subcommittee members and from the other four Implementation Subcommittee's Working Groups. WG1's product is the instant report (IM00041-B 20010510).

WORKING GROUP 2 – DTV Transition

Implementation Sub-Committee Work Group 2 was chaired by David Eierman.

Work Group reviewed the effects of 700 MHz TV/DTV spacing rules and transition plans upon implementation of Public Safety systems.

WG2 studied incumbent broadcast TV/DTV station assignments throughout the country and from that data, produced maps showing those areas of the United States where 700 MHz spectrum is immediately available for assignment. The maps also demonstrate those areas of the country that are blocked by incumbent TV/DTV broadcast stations.

To maximize public safety use of 700 MHz in those portions of the nation which have significant TV/DTV broadcast incumbent blockage, WG2 developed methodologies for short-spacing public safety to TV/DTV. The proposed methodologies included engineering analysis and terrain-based coverage analysis.

The WG reviewed the TV/DTV transition timelines and presented updated on TV/DTV broadcaster activity, spectrum auctions, and proposed band-clearing methodologies. The WG monitored active dockets and rulemakings in the Mass Media Bureau and suggested that public safety comment in those proceedings which affected the 700 MHz band.

Because of the impact of proposed Canadian DTV allotments and existing Canadian TV assignments, the WG reviewed the impact of the International Border Blockage issues with appropriate FCC personnel and affected public safety representatives.

WG2's report is included in this report as Appendix P, IM00040-A-20010510.

WORKING GROUP 3 – Policy Recommendations

WG3 was chaired by Fred Griffin.

In developing the Draft National Plan, (DNP) WG3 reviewed the Booz-Allen report on the 821 plans prepared in support of the Public Safety Wireless Network (PSWN) program in March of 1998 (A Study to Access the Relative Merits of Spectrum Around 800 MHz as an Operating Band for Public Safety Communications). This report analyzed and compared the effectiveness of the fifty-five 821 Regional Plans. They identified problem areas such as lack of funding, the lack of oversight on a national basis, and the lack of a common database. Based on the positive as well as negative experience gained at 821 MHz, the WG recommended that many of the elements of the 821 RPCs be carried over to the 700 MHz RPCs.

WG3 also examined docket 96-86, rule section 90.527 where the required elements of each regional plan are listed. The WG responded with a Regional Planning Guideline and 700 MHz Regional Plan template to assist the 700 MHz RPCs in the development of their plans.

The WG developed a matrix comparing the 700 MHz and 821 MHz National Plan required elements. Most items were the same. Notable exceptions were the emphasis on interoperability, seeking input and participation from all aspects of the region – emergency management, Indian tribes, non-government organizations, etc.

The WG then developed a draft 700 MHz National Plan listing all the required elements. A sampling of 821 Regional Plans were examined and, where positive results had been obtained, the same processes were carried over to 700 MHz. For instance, the matrix developed at 821 MHz to rate competing applications and determine which applications received priority over others was adopted with minor changes.

While the 700 MHz National Plan elements are virtually identical to the 821 National Plan, the 700 MHz band itself has many technical aspects which are different from the 821 band. Therefore, a document containing guidelines for the RPCs to follow as they developed their plans was needed. This "Guidelines" document contains information, suggestions and provides guidance and direction to the RPCs. For instance, the availability of 700 MHz within a specific region depends on whether or not there are blocking broadcast TV stations operating in the region. Region-specific information about broadcast TV incumbency in the band will be available on the NLECTC website as part of the NLECTC database.

The "guidelines" document also contains information on ways to facilitate the exchange of information between RPC members such as listservers, websites. In addition the guidelines provide information on how to obtain funds for regional start-up. To maximize flexibility within the regions, the guidelines emphasize those items and sections which the WG feels should be addressed in every plan.

The Draft National Plan was first distributed to the NCC Implementation Subcommittee at the New York City meeting in November 1999. Electronic contributions were exchanged and many other drafts have been distributed throughout 2000 and 2001.

At each subsequent implementation subcommittee meeting, suggestions and changes made by the membership were incorporated into the draft document.

As of May 2001, there are over 20 Regions that have either begun planning, held their first meeting, or who have selected their convenors. These regions are looking for guidance. WG3 has been sending its documents to each RPC convenor as they become known.

It would be helpful if the Commission were to provide links to WG3's documents online. One suggestion would be to place them on the Public Safety Web Page under the 700 MHz Planning Section.

WG3 also recommends that the Commission release a Public Notice or News Release endorsing the use of WG3 documents in the Regional Planning process. That Public Notice should list a web address from which the documents could be downloaded.

See Document Numbers IM00017-K-20010510, IM00020-I-20010510, and Appendices A-P (Document Numbers IM00025 through IM00040) for the report of WG3.

WORKING GROUP 4 – Technology Policy

This Working Group was chaired by Ali Shahnami. The Technology Working Group was charged with recommending set of procedures for Coordination and Licensing, and Interference Issues.

I Coordination and Licensing

Based on extensive experience from the NPSPAC licensing process, the WG agreed that the majority of the existing procedures for Pre-Coordination Frequency Allotment within the regions have proven to be successful, with an exception of lack of a National Database and approved procedures for adjacent state/region coordination. The WG reviewed and thoroughly studied the attached flow charts (Appendices H & I, IM00032 and IM00033), which were devised and approved by all FCC authorized public safety coordinators as part of the Pre-coordination Database development process. The WG believes that this flow chart clearly and accurately depicts all the necessary steps for frequency coordination and licensing.

Furthermore, WG4 believes that if regions simply follow the flowcharts included as Appendices H and I as their guidelines, adjacent regions will be required to communicate avoiding future conflicts. Moreover, by using the National Database, members of a region or adjacent regions would be able to view the recommended plan as it is being submitted for adjacent region concurrence and/or FCC approval.

II Interference Issues

Frequency allocation should be based on a defined area such as political jurisdiction, such as county, or by a data file consisting of line segments creating a polygon that encompasses the defined geographic area of operation.

For co-channel assignments, the 40 dBµ coverage contour will be allowed to extend beyond the defined area of operation (AOP) by 3 to 5 miles, depending on the type of environment: urban, suburban or low density (See Table 1). The 5 dBµ interfering co-channel contour will be allowed to touch but not overlap the 40 dBµ coverage contour of the system being evaluated. All contours are (50,50). (See Figure 1).

Type of Area	Extension (mi.)
Urban (20 dB Buildings)	5
Suburban (15 dB Buildings)	4
Rural (10 dB Buildings)	3

Table 1 - Recommended Extension Distance of 40 dB µ Field Strength

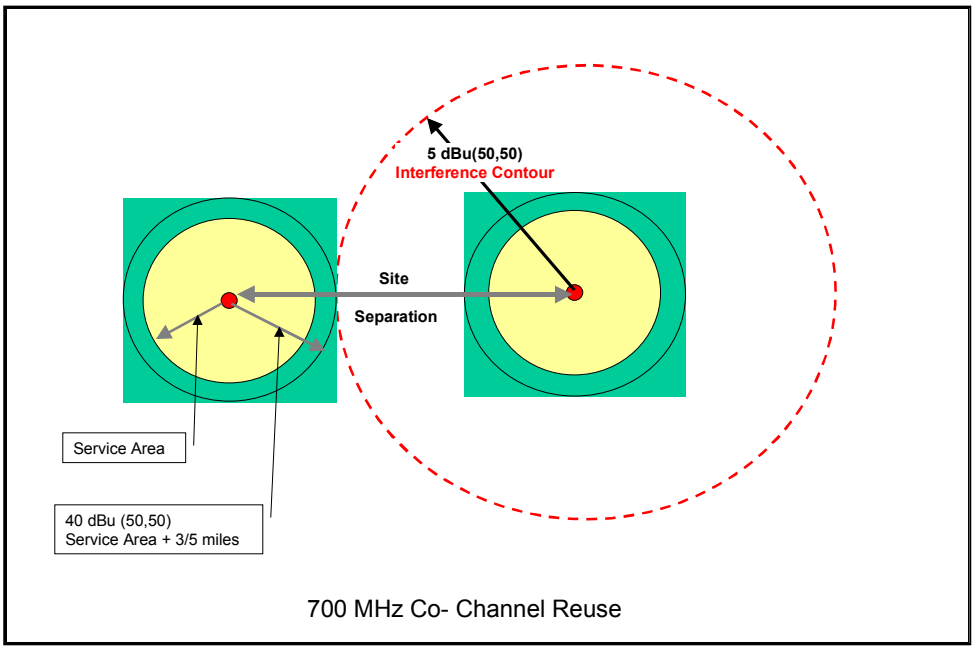

Figure 1 - Co-Channel Reuse Criterion

For most adjacent and alternate channels or for preliminary analysis between 25 kHz spectrum blocks, the 60 dBµ interfering contour will be allowed to touch but not overlap the 40 dBµ contour of the system being evaluated. (See Figure 3). All contours are (50,50). This assumes > 65 dB coupled power protection (ACCPR) between channels. Some close channel separations between different technologies (see Figure 2 and Table 2) require additional protection because

coupled power protection is much lower (40 dB ACCPR). Therefore, we may have to utilize a more analysis for those specific cases.

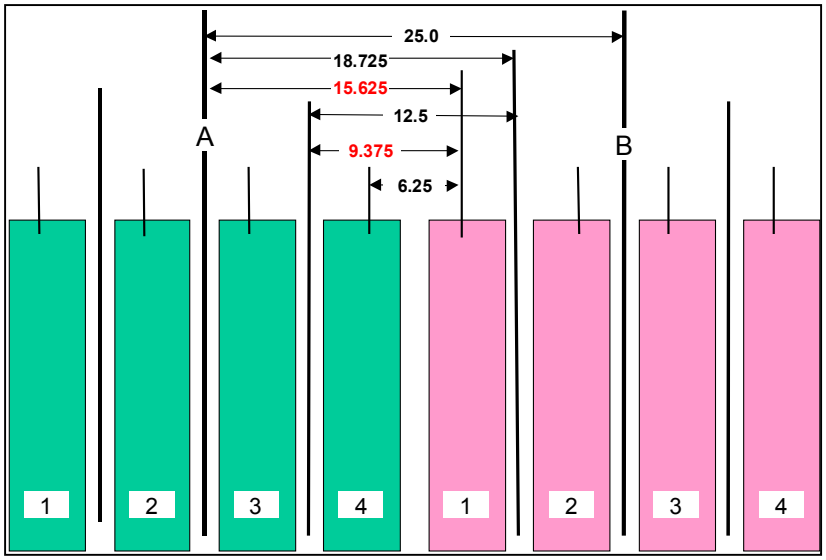

Figure 2 - Potential Frequency Separations

Center-to-Center Channel Spacing	ACCPR
25 kHz	65 dB
18.725 kHz	65 dB
15.625 kHz	**>40 dB**
12.5 kHz	65 dB
9.375 kHz	**>40 dB**
6.25 kHz	65 dB

Table 2 - ACCPR Values For Potential Frequency Separations

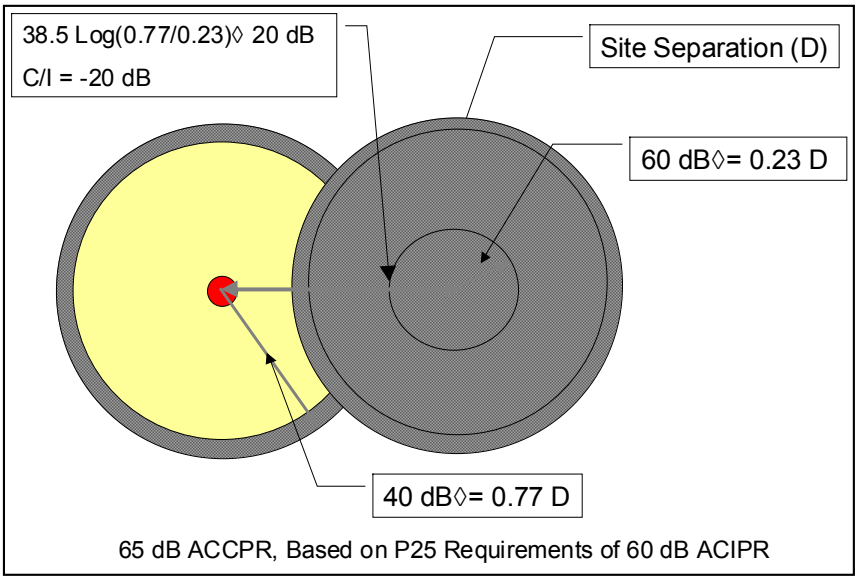

Figure 3 - Example Of Adjacent/Alternate Overlap Criterion

For complete details on Co-channel and Adjacent channel coverage and interference contours, for different bandwidth, and for various technologies see Appendix O, which is the output of the TIA TR8.18 Committee, commonly referred to as the TSB88 document.

WORKING GROUP 5 – Funding

Working Group 5, chaired by Tom Tolman, prepared a report on existing funding mechanisms available through state, local and federal sources to be used for equipment purchases. The WG also identified funding for RPC start-up costs and established a mechanism whereby RPCs can request reimbursement for certain expenses. See Appendices K & L (Document Numbers IM00035 and IM00036) for the reports of WG5

The National Institute of Justice (NIJ) has made funding available to the Regional Planning Committees (RPC) through the NIJ's AGILE (Advanced Generation of Interoperability For Law Enforcement) Program. The Regional Planning Committee Support Funding Program was formed to promote the efforts of the Regional Planning Committees in planning the use of the newly allocated 700 MHz public safety spectrum. Funds will be distributed through the National Public Safety Telecommunications Council (NPSTC) Support Office <www.npstc.org> as hosted by the University of Denver.

Requests for funding must be initiated by the designated regional convener or by the established 700 MHz RPC chairperson. In order to obtain funding, each region must identify a single public safety host organization that agrees to take fiduciary responsibility for the proper allocation of the awarded funds through a simplified accountability process based on a standardized form for financial summary reporting.

The maximum funding available to any Regional Planning Committee under the 2001 support funding program is $2,500.00. This funding may be requested on a one-time basis as either preliminary funding of anticipated expenses with the responsibility of annual financial summary reporting specifying each area of expenditure (until all such funds are depleted); or, as reimbursement funding for authorized, documented expenses incurred by the Regional Planning Committee during a period prior to the request but not before January 1, 2000. Copies of expense receipts are required to be submitted with the financial summary reports.