

REGION 23 700 MHz PLAN

APPENDIX T - DTV TRANSITIONS

This Appendix Contains

1. The Plan's reference for technical information on spectrum realignment as related to the transition from analog television broadcasting to digitalized television broadcasts.

NOTE: The Region 23 700 MHz Plan's Appendix "T" may also be identified as "National Coordination Committee — Implementation Subcommittee Appendix P - DTV Transition (IM00040-A 20010510)"

APPENDIX P DTV TRANSITION

The date is now beyond the required date for transition to DTV and the following remains in the document for informational purposes only.

APPENDIX P

DTV TRANSITION

Frequency Availability through the DTV Transition

On August 14, 1996, the FCC released a *Sixth Further Notice of Proposed Rule Making* in the digital television (DTV) proceeding. A portion of the spectrum recovered from TV channels 60-69 when DTV is fully deployed "could be used to meet public safety needs."¹ By Congressional direction in the Balanced Budget Act of 1997, the FCC reallocated 24 MHz of spectrum to Public Safety services in the 764-776 MHz and 794-806 MHz bands. The statute required the FCC to establish service rules, by September 30, 1998, in order to start the process of assigning licenses. The rules that the FCC established by September 30, 1998, "provided the minimum technical framework necessary to standardize operations in this spectrum band, including, but not limited to: (a) establishing interference limits at the boundaries of the spectrum block and service areas; (b) establishing technical restrictions necessary to protect full-service analog and digital television service during the transition to digital television services; (c) permitting public safety licensees the flexibility to aggregate multiple licenses to create larger spectrum blocks and service areas, and to disaggregate or partition licenses to create smaller spectrum blocks or service areas; and (d) ensuring that the new spectrum will not be subject to harmful interference from television broadcast licensees"².

In April 1997, the FCC assigned a second 6 MHz block of spectrum to each license (or permit to construct) holders of full power, analog, television broadcast station (NTSC) in order to construct a digital television station (DTV). Secondary low power television stations (LPTV), secondary translators and boosters (TX), mutually exclusive applications for new stations, and application filed after a cut-off date did not receive a second 6 MHz allotment for DTV. The FCC established about a 10 year timeline for those stations with a DTV assignment to construct a DTV station, cease NTSC transmissions, and return one of the two 6 MHz blocks of spectrum to the FCC. Target date for the end of analog television (NTSC) transmission was set for December 31, 2006.

Congress provided several market penetration loopholes (>85% households served, all 4 major networks converted, etc) allowing NTSC operations to continue past the December 31, 2006 date. While there are over 100 NTSC full power stations in this band, there are also about 12 DTV assignments. The DTV assignments might continue operations past the December 31, 2006 date for two reasons. 1) They must find a suitable channel below channel 60 to move to,

¹Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service, M Docket No. 87-268, *Sixth Further Notice of Proposed Rule Making*, 11 FCC Rcd 10,968, 10,980 (1996) (*DTV Sixth Notice*).

²FCC 98-191, 1st R&O and 3rd NPRM on WT Docket No. 96-86 Operational & Technical Requirements of the 700 MHz Public Safety Band, para.4.

which may be their own NTSC assignment. They may not be able to find another allocation until other NTSC stations have ceased operations and returned a channel below 60 to the FCC. Or, 2) their license does not expire until after 2006 (most are licensed into 2007 or 2008).

Protection of Public Safety from future TV/DTV Stations

Public safety base and mobile operations must have a safe distance between the co-channel or adjacent TV and DTV systems. This typically means that a co-channel and adjacent channel base and mobile system cannot operate in areas where TV stations already exist. The public safety systems that will operate in the 70 MHz band for some locations in the U.S. and its possessions must wait until the transition period is over and the TV/DTV stations have moved to other channels before beginning operations. In other areas, channels will be available for public safety operations. During the transition period, public safety stations must be acutely aware of the TV allocations for both TV and DTV stations. The FC wants the number of situations where the public safety license has to coordinate its station with the existing TV stations kept to a minimum. The Commission's decisions in the reallocation of spectrum to DTV implemented two requirements which will help public safety systems to protect TV/DTV stations and reduce the number of coordinations. The first requirement is that full power UHF-TV stations can no longer apply for channels 60-69 or modifications in channels 60-69 which would increase the stations' service areas, which creates a known environment for public safety licensees.³The second requirement is that since only existing TV station licensees can apply for DTV channels, the applicants and their proposed locations are already known.⁴

³See *Reallocation Report and Order*, 12 FCC Rcd 22,969-22,970. Stations with existing channel 60-69 TV construction permits must complete their stations and file for a license by January 2, 2001.

⁴See *DTV Sixth Report and Order*, 12 FCC Rcd 14,739-14,754; See also *In the Matter of Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service, Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order* in MM Docket No. 87-268, 13 FCC Rcd 7418 (1998). The 11

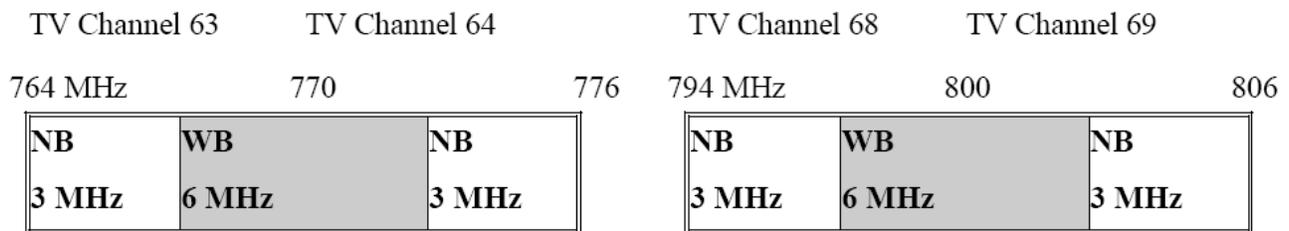
STATE	CITY	NTSC TV Ch.	DTV Ch.	ERP (kW)	HAAT (m)
California	Stockton	64	62	63.5	874
California	Los Angeles	11	65	688.7	896
California	Riverside	62	68	180.1	723
California	Concord	42	63	61.0	856
Pennsylvania	Allentown	39	62	50.0	302
Pennsylvania	Philadelphia	6	64	1000.0	332
Pennsylvania	Philadelphia	10	67	791.8	354
Puerto Rico	Aguada	50	62	50.0	343
Puerto Rico	Mayaguez	16	63	50.0	347
Puerto Rico	Naranjito	64	65	50.0	142
Puerto Rico	Aguadilla	12	69	691.8	665

Also, the low power TV stations and translators already on channels 60-69 are secondary and must cease operations if they cause harmful interference when a primary service, like land mobile, comes into operation. The secondary Low Power TV stations already on channels 60-69 cannot apply for the new Class A protection status.

Spectrum Overview

700 MHz Public Safety Band - 24 megahertz of spectrum

TV 61	TV 62	TV 63	TV 64	TV 65	TV 66	TV 67	TV 68	TV 69	806-824 LMR Band
		Public Safety 6 MHz	Public Safety 6 MHz				Public Safety 6 MHz	Public Safety 6 MHz	



NB = narrowband channels

WB = wideband channels

The FCC designated 764-776 MHz (TV Channels 63 and 64) for base-to-mobile transmissions and 794-806 MHz (TV Channels 68 and 69) for mobile-to-base communications. In addition, base transmit channels in TV Channel 63 are paired with mobile channels in TV Channel 68 and likewise that base channels in TV Channel 64 are paired with mobile channels in TV Channel 69. This provides 30 MHz separation between base and mobile transmit channel center frequencies. This band plan was suggested because of the close proximity of TV Channels 68 and 69 to the 806-824 MHz band, which already contains the transmit channels for mobile and portable radios (base receive).

Mobile transmissions are allowed on any part of the 700 MHz band, not just the upper 12 MHz. This will facilitate direct mobile-to-mobile communications (*i.e.*, not through a repeater) that are often employed at the site of an incident, where wide area communications facilities are not available or desired. Allowing mobile transmissions on both halves of a paired channel is generally consistent with FC rules governing use of other public safety bands.

Non-uniform TV Channel Pairing

There are currently geographical areas where, either licensed or otherwise protected full-service analog or new digital, television stations are currently authorized to operate on TV Channels 62, 63, 64, 65, 67, 68, and 69.⁵ During the DTV transition period, an incumbent TV station occupying one or more of the four Public Safety channels (63, 64, 68, 69) or the three adjacent channels (62, 65, 67) may preclude pairing of the channels in accordance with the band plan defined above. Therefore, to provide for cases where standard pairing is not practicable during the DTV transition period, the FC will allow the RPCs to consider pairing base-to-mobile channels in TV Channel 63 with mobile-to-base channels in TV Channel 69 and/or base-to-mobile channels in TV Channel 64 with mobile-to-base channels in TV Channel 68. Because such non-standard channel pairing may cause problems when the band becomes more fully occupied, the FC expects the RPCs to permit such non-standard channel pairing only when absolutely necessary, and the FC may require stations to return to standard channel pairing after the DTV transition period is over. However, the FC will not permit non-standard channel pairing on the nationwide interoperability channels in the 70 MHz band because of the need for nationwide uniformity of these channels.

At least three issues must be considered before deciding upon non-uniform channel pairing:

1. Preliminary analysis, looking at current incumbent TV stations, shows few geographic areas where non-uniform pairing allows early implementation of 700 MHz systems. As DTV Transition progresses, and TV stations vacate the band, this situation might change.
2. If interoperability channels must be uniform, operation on I/O channels will be blocked until all incumbent TV stations are cleared, even though General Use channels may be implemented earlier.
3. If I/O channels must follow uniform pairing, and general use & reserve channels can be implemented using non-uniform pairing, narrowband voice subscriber equipment must operate on 3 different channel pairings - 39 MHz (764-767 paired with 803-806 MHz), 30 MHz, and 21 MHz (773-776 paired with 794-797 MHz). Likewise, there will be 3 different channel pairing for wideband channels. No vendors have volunteered to build equipment & systems for non-uniform pairing, yet.

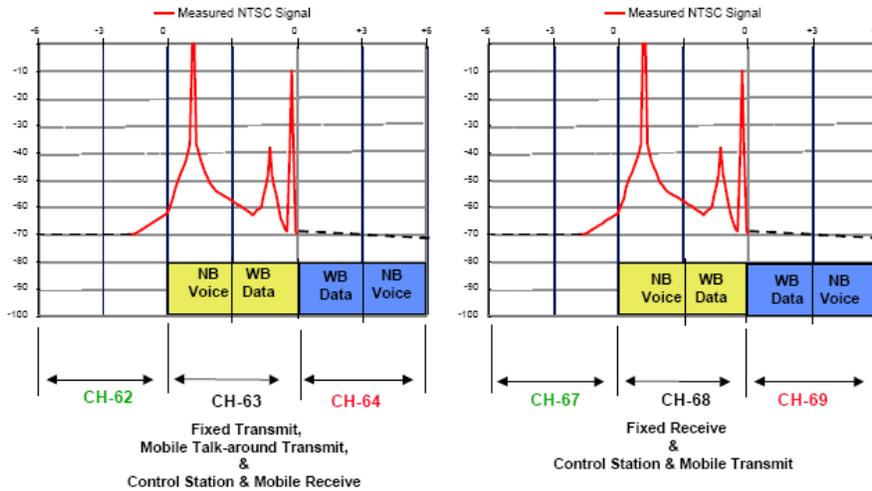
TV/DTV Protection

During the DTV Transition period, public safety must consider all co-channel and adjacent channel TV and DTV stations within about a 160 mile radius.

For public safety channel pair 63/68, public safety must consider six TV/DTV channels - co-channels 63 and 68, as well as, adjacent channels 62, 64, 67, and 69.

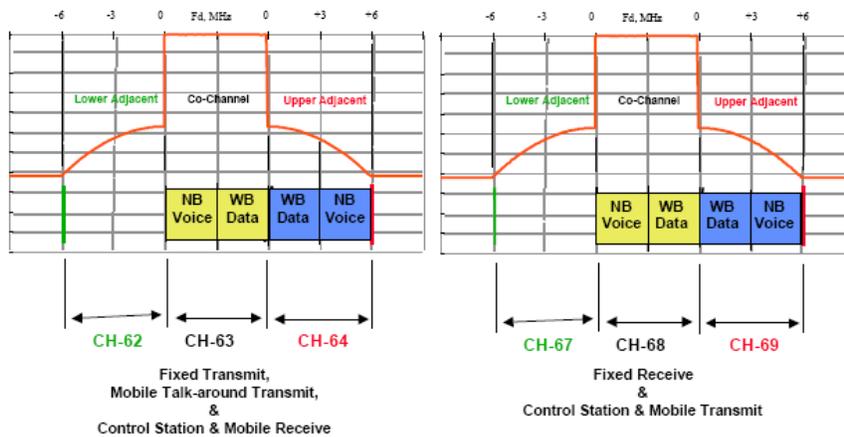
⁵See *Reallocation, Notice of Proposed Rule Making*, 12 FCC Rcd at 14,141, 14,177-78 and 14,182-83.

**Measured (off-the-air) Analog TV Signal
VS
700 MHz Public Safety Assignments**



**HAVE 2 CO-CHANNEL AND 4 ADJACENT CHANNELS
TO CONSIDER FOR EACH 700 MHz PAIRED BLOCKS OF SPECTRUM**

**DTV Emission Mask
VS
700 MHz Public Safety Assignments**



**HAVE 2 CO-CHANNEL AND 4 ADJACENT CHANNELS
TO CONSIDER FOR EACH 700 MHz PAIRED BLOCKS OF SPECTRUM**

For public safety channel pair 64/69, public safety must consider five TV/DTV channels; co-channels 64 and 69, as well as, adjacent channels 63, 65, and 68.

It may only takes one TV/DTV station to block operations on one, the other, or both public safety channel pairs. For a public safety system at 500 watts ERP and 500 ft HAAT, co-channel TV stations can block a 120 mile radius and adjacent channel TV/DTV stations can block a 90 mile radius.

Since base stations transmitters are located only on channels 63 and 64, LMR mobile only TV/DTV protection spacing on channels 68 and 69 may be shorter than LMR base TV/DTV protection on channels 63 & 64.

TV/DTV Protection Criteria

Public safety applicants can select one of three ways to meet the TV/DTV protection requirements: (1) utilize the geographic separation specified in the 40 dB Tables of 90.309; (2) submit an engineering study to justify other separations which the Commission approves; or (3) obtain concurrence from the applicable TV/DTV station(s).

90.309 40 dB D/U Tables

The FCC adopted a 40 dB desired (TV/DTV) to undesired (LMR) signal ratio for co-channel operations and a 0 dB desired/undesired(D/U)signal ratio for adjacent channel operations. The D/U ratio is used to determine the geographic separation needed between public safety base stations and the Grade B service contours of co-channel and adjacent channel TV/DTV stations.⁶ The D/U signal ratio is used to determine the level of land mobile signals that can be permitted at protected fringe area TV receiver locations without degrading the TV picture to less than a defined picture quality. In other words, the D/U signal ratio indicates what relative levels of TV and land mobile signals can be tolerated without causing excessive interference to TV reception at the fringe of the TV service area.

Desired and undesired contours are not quite the same thing. Desired analog TV contours are defined as F(50,50), meaning coverage is 50% of the places and 50% of the time. Undesired land mobile or interference contours are defined as F(50,10). For Digital TV, the desired contours are defined as F(50,90), while the undesired land mobile contour are still F(50,10).

Land mobile and analog TV services have successfully shared the 470-512 MHz band (TV Channels 14-20) within a 50 mile radius of eleven major cities since the early 1970's based upon providing a signal ratio of at least 50 dB⁷ between the desired TV signal and undesired co-channel land mobile signal (D/U signal ratio) at a hypothetical 88.5 km (55 mi) Grade B service contour and an adjacent channel D/U signal ratio of 0 dB at the same hypothetical Grade B service contour. These separation distances also protected the land mobile systems from interference from the TV stations. In 1985, recognizing that 50 dB D/U was too conservative, the FC proposed to expand land mobile/TV sharing to other TV channels and proposed that the geographic separation requirements for co-channel operations be based on a D/U signal ratio of

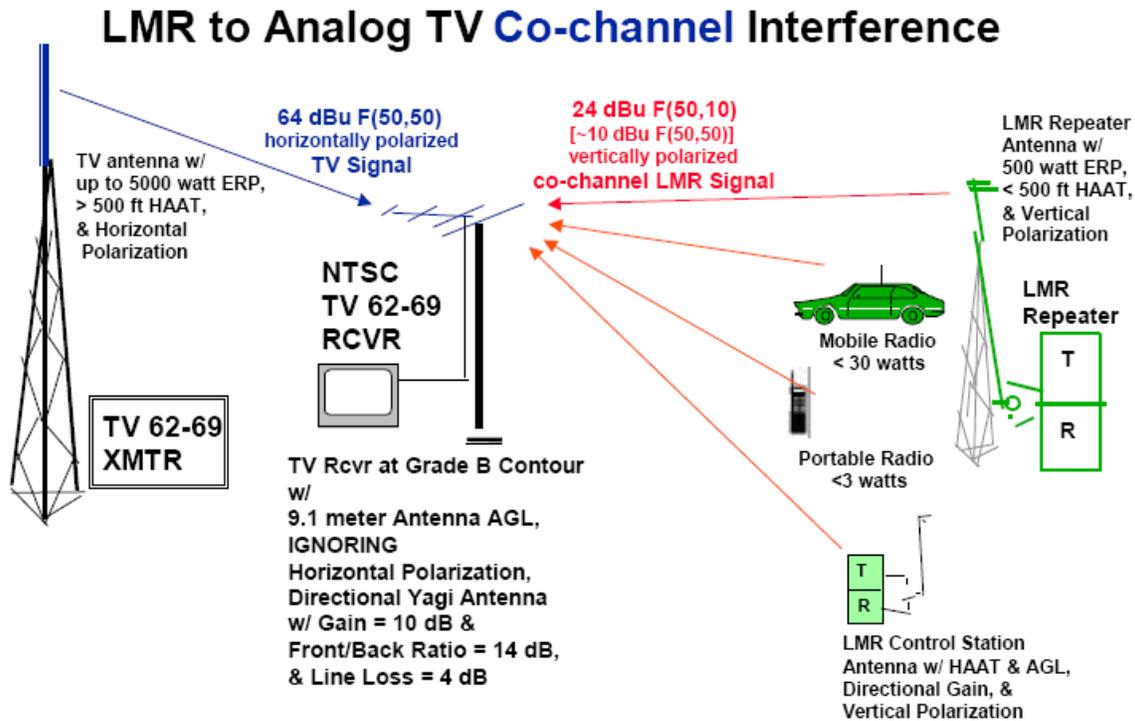
⁶See *Second Notice*, 12 FCC Rcd 17,803.

⁷ For TV Channel 15 in New York City, a 40 dB D/U signal ratio is used. See 47 C.F.R. §§ 90.307(b) and 90.309 (Table B). A 50 dB protection ratio means that the amplitude of the desired TV signal is more than 300 times greater than the amplitude of the undesired signal at the Grade B service contour. A 40 dB protection ratio means the desired TV signal is 100 times greater.

40 dB rather than 50 dB.⁸ That proceeding was put on hold pending completion of the DTV proceeding, which has now been completed. In the 470-512 MHz band, the FCC also relied on minimum separation distances based on the various heights and powers of the land mobile stations (HAAT/ERP separation tables) to prevent harmful interference.

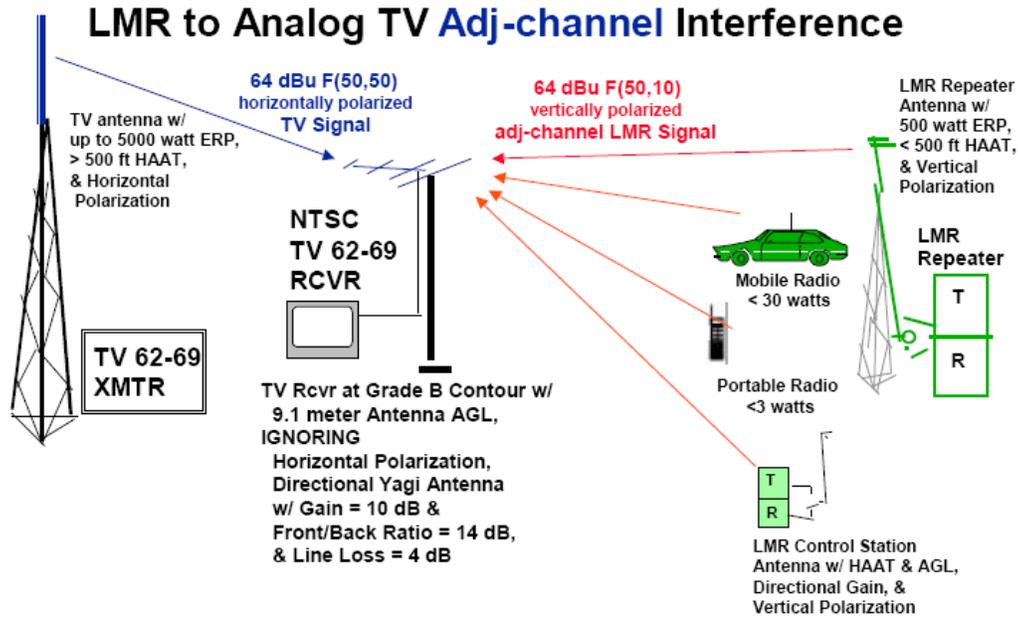
Since this simple, yet conservative, method was successful, the FC decided to use this same method, the 90.309 HAT/ERP Separation Tables, to administer LMR to TV/DTV receiver protection criteria for the services in the 700 MHz band.

Co-channel land mobile base station transmitters are limited to a maximum signal strength at the hypothetical TV Grade B contour 40 dB D/U below desired 64 dBu F(50,50) analog TV signal level, or 24 dBu F(50,10).⁹ The FC adopted a 0 dB D/U signal ratio for adjacent channel operations. Adjacent channel land mobile transmitters will be limited to a maximum signal of 64 dBu F(50,10) which is 0 dB D/U below the TV Grade B signal of 64 dBu F(50,50) at the TV station Grade B contour of 88.5 km (55 miles). A typical TV receiver's adjacent channel rejection is at least 10-20 dB greater than this level which will further safeguards TV receivers from land mobile interference.



⁸See Amendment of the Rules Concerning Further Sharing of the UHF Television Band by Private Land Mobile Radio Services, GEN Docket No. 85-172, *Notice of Proposed Rulemaking*, 101 FCC 2d 852, 861 (1985) (*UHF-TV Sharing NPRM*).

⁹ In terms of miles, if everything else is the same, a 40 dB D/U ratio rather than a 50 dB D/U ratio allows base stations to be located approximately 48.3 km (30 mi) closer to a co-channel TV station. See 47 C.F.R. § 90.309, Tables A & B.



The equivalent ratios for a DTV station's 41 dB F(50,90) desired field strength contour are land mobile 17 dB F(50,10) contour for co-channel and land mobile - 23 dB F(50,10) contour for adjacent channel.

The Tables to protect TV/DTV stations are found in Section 90.309 of the Commission's rules. These existing Tables cover co-channel protection based on a 40 dB D/U ratio using the separation methods described in Section 73.61 of the Commission's rules for base, control, and mobile stations, and for adjacent channel stations for base stations based on a 0 dB D/U ratio. However, the original considerations in 470-512 MHz band under Section 90.309 were different in that mobiles were limited in their roaming distance from the base station (less than 30 miles) and mobiles were on the same TV channel as the base station.

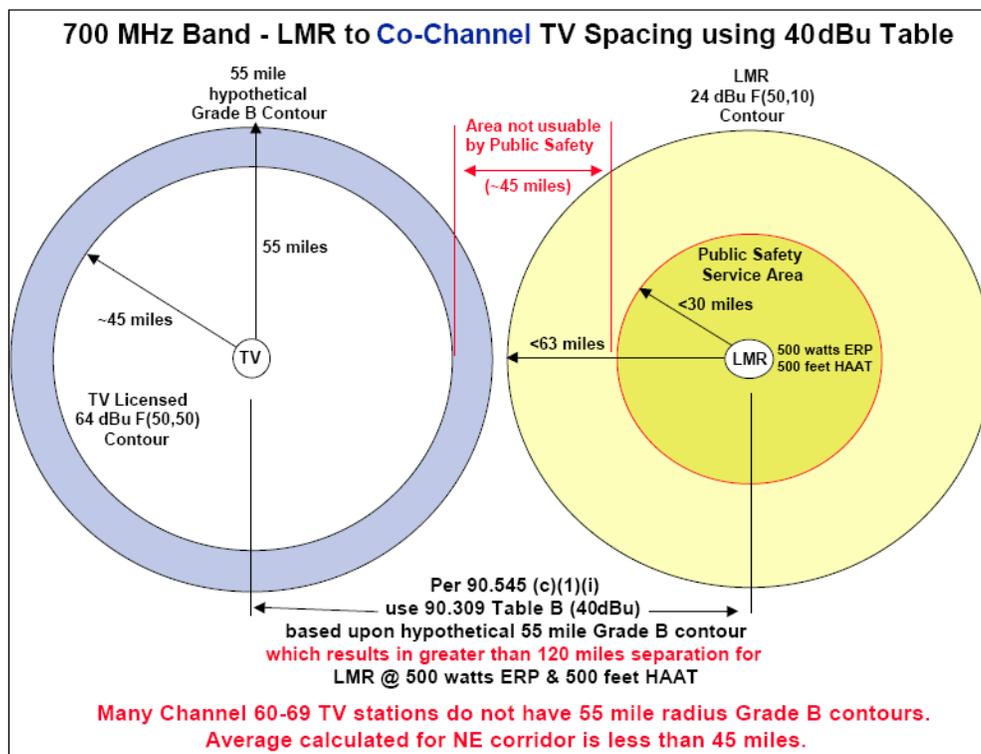
Control and mobile stations (including portables) are limited in height (200 ft for control stations, 20 ft for mobiles/portables) and power (200 watts ERP for control stations, 30 watts for mobiles, 3 watts for portables). Mobiles and control stations shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the values specified in Table D (co-channel frequencies based on 40 dB protection for TV and 17 dB for DTV) in § 90.309. Control stations and mobiles/portables shall keep a minimum distance of 8 kilometers (5 miles) from all adjacent channel TV/DTV station hypothetical or equivalent Grade B contours (adjacent channel frequencies based on 0 dB protection for TV and -23 dB for DTV). This means that control and mobile stations shall keep a minimum distance of 96.5 kilometers (60 miles) from all adjacent channel TV/DTV stations.

Since operators of mobiles and portables are able to move and communicate with each other, licensees or coordinators must determine the areas where the mobiles can and cannot roam

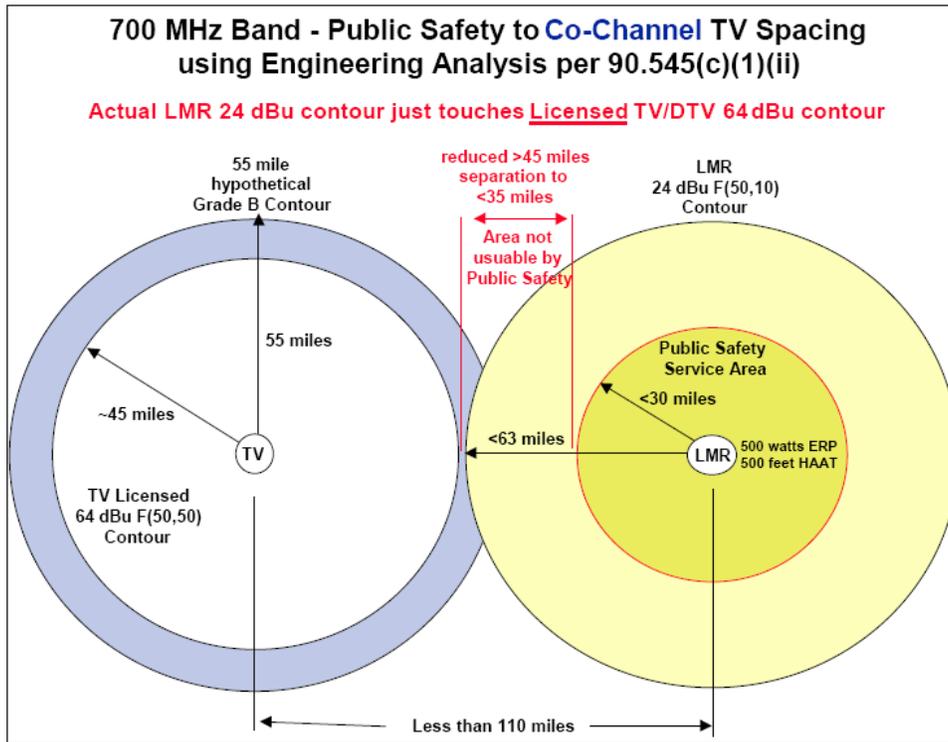
in order to protect the TV/DTV stations, and advise the mobile operators of these areas and their restrictions.

Engineering Analysis

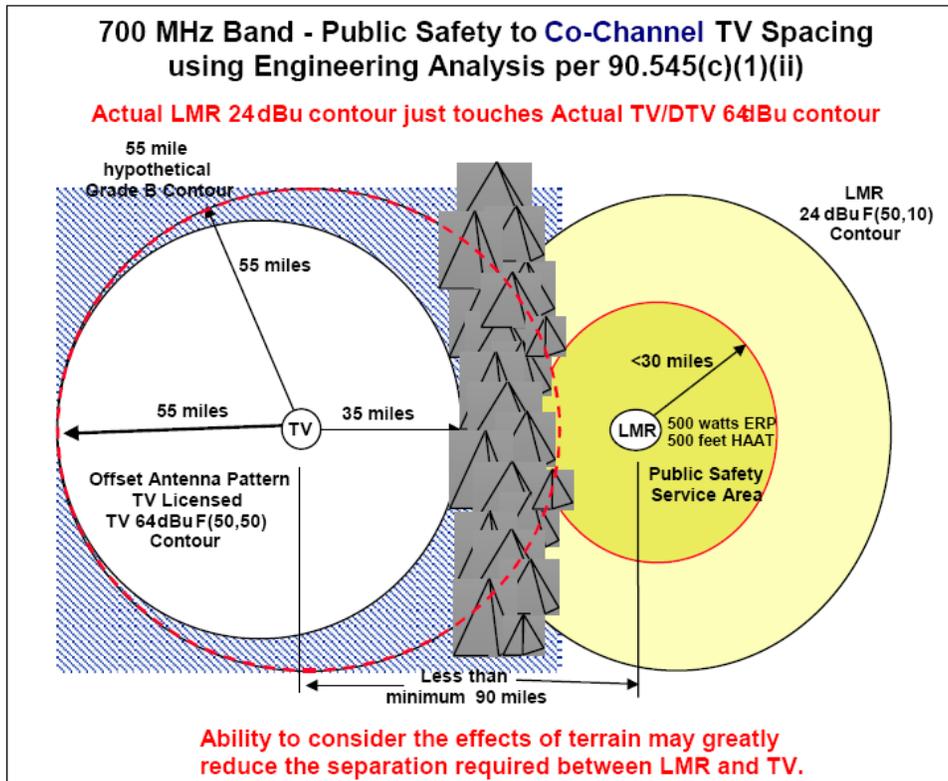
Limiting TV/land mobile separation to distances specified in the 40 dB HAAT/ERP Separation Tables found in 90.309 may prevent public safety entities from fully utilizing this spectrum in a number of major metropolitan areas until after the DTV transition period ends. Public safety applicants will be allowed to submit engineering studies showing how they propose to meet the appropriate D/U signal ratio at the existing TV station's authorized or applied for Grade B service contour or equivalent contour for DTV stations instead of the hypothetical contour at 88.5 km.



This would permit public safety applicants to take into account intervening terrain and engineering techniques such as directional and down-tilt antennas in determining the necessary separation to provide the required protection. Public safety applicants who use the engineering techniques must consider the actual TV/DTV parameters and not base their study on the 88.5 km hypothetical or equivalent Grade B contour. If land mobile interference contour does not overlap the TV Grade B contour (or DTV equivalent), then engineering analysis may be submitted to the FC with the application.



This method is most useful with lower power TV stations whose Grade B contours are much smaller than the hypothetical 55 mile (88.5km) Grade B contour or have directional patterns.



Note that a 200 ft AGL limitation on 700 MHz control stations is much higher than the 100 ft AGL limitation used at UHF. Limiting control station antenna height and/or ERP may greatly reduce land mobile to TV contour spacing.

Also, note that analysis for TV/DTV receivers uses 30 ft (10 m) antenna height whereas, analysis for land mobile subscribers uses about a 6 ft (2m) antenna height.

TV/DTV Short-spacing

Public safety applicants will also be allowed to "short-space" even closer if they get the (written) approval of the TV stations they are required to protect. Public safety applicants need to determine the station's intended market area vs. its hypothetical Grade B contour area. Alternately, the TV/DTV station may be short-spaced against another TV/DTV station, limiting their area of operation, but does not affect LMR operations. Instead of each agency negotiating with a TV/DTV station individually, they may want to combine into a single group or committee and negotiate together.

TV/DTV Height Adjustment Factor

In order to protect certain TV/DTV stations which have extremely large contours due to unusual height situations, such as a television station mounted on top of Mount Wilson near Los Angeles, California, the FC incorporated an additional height adjustment factor which must be used by all public safety base, control and mobile stations to protect these few TV/DTV stations and afford the land mobile stations the necessary protection from the TV/DTV stations. The equation necessary to calculate the additional distance from the hypothetical or equivalent Grade B contour is found in the rules section 90.545(c)(2)(iii).

CANADIAN AND MEXICAN BORDER REGIONS

The FC typically takes one of two approaches. They either postpone licensing of land mobile stations within a certain geographic distance (*e.g.*, 120 km (75 miles)) of Canada and Mexico, or permit interim authorizations conditioned on the outcome of future agreements. Because international negotiations can take many months or even years to finalize, the FC took the later approach and adopted certain interim requirements for public safety licenses along the Canada and Mexico borders, providing that the licenses are subject to whatever future agreements the United States develops with the two countries.

Nevertheless, existing mutual agreements with Canada and Mexico for the use of these bands for UHF television must be recognized until further negotiations are completed. The US negotiated an agreement with Mexico of DTV operations near the US/Mexican border in July 1998. The US just negotiated an agreement with Mexico of DTV operations, and limited non-broadcast operations on 746-806MHz, near the US/Canadian border in September 2000. Existing agreements recognize existing TV and/or DTV allotments and planning factors within a specified distance of the border. The Canadian Letter of Understanding also acknowledges that US plans to use 746-806 MHz for non-broadcast purposes and provides planning criteria (40 dB D/U) to protect Canadian TV/DTV receivers.

Additionally, public safety facilities within the United States must accept interference from authorized channel 60-69 TV transmitters in Canada and Mexico in accordance with the existing agreements. Since the locations of the Canadian and Mexican analog TV assignments and DTV allotments are known, the public safety applicants can consider the levels of harmful interference to expect from Canadian and Mexican TV/DTV stations when applying for a license. Both Canada and Mexico have been informally notified that the Commission has changed its allocated use of TV channels 60-69, and the Commission will discuss the possibility of mutually compatible spectrum use with Canada and Mexico.

REGION 23 700 MHZ PLAN APPENDIX U - MSPSFAC COMMITTEE STRUCTURE

This Appendix Contains

1. The Plan's illustration of the committee structure of the Mississippi Public Safety Frequency Advisory Committee (MSPSFAC).

NOTE: The Region 23 700 MHz Plan will be administered by MSPSFAC upon formal approval of the Plan by the Federal Communication Commission.

APPENDIX U MSPSFAC Committee Structure

Agency	No. of Representatives	
	Member	Alternate
Mississippi Band of Choctaw Indians	1	1
Mississippi Association of Supervisors	1	1
Mississippi Association of Police Chiefs	1	1
Mississippi Sheriff's Association	1	1
Mississippi Association of Fire Chiefs	1	1
Mississippi Municipal League	1	1
Mississippi Prehospital Professions Association	1	1
Mississippi Emergency Management Agency	1	1
Mississippi Department of Public Safety	1	1
Mississippi Wireless Communication Commission	1	1
Mississippi APCO Chapter	1	1
Mississippi NENA Chapter	1	1

There are also 4 APCO appointed members of the committee representing city or county public safety agencies that have a background in either or both of the following:

1. Radio frequency systems
2. Public safety answering point

MSPSFAC MEETINGS

The MSPSFAC meetings function in accordance with Roberts Rules of Order.

MSPSFAC ROUTINE DUTIES

- A chairman is elected during the first meeting each year.
- MSPSFAC shall meet at least twice a year and may meet at the discretion of the majority members or by call of the Chairperson. Time and location of meetings shall be at the call of the Chairperson or majority vote at a meeting; when application need committee action. Applications are to be sent to committee members by the applicant two weeks prior to the meeting. The applicant can obtain the addresses form the MSPSFAC secretary.
- Review application based upon the Region 23 matrix. Review the application(s) for interoperability technical requirements. Further the MSPSFAC will review the application(s) for interoperability operational requirements if there is no SIEC
- Deal with appeals/application clarification, consider applicant presentations.
- Interact with applications to determine if the implementation of their systems is in accordance with their applications.
- Maintain coordination with neighboring regional committees and other FCC certified frequency coordinators and their advisors.
- Promulgate other rules and procedures as need to operate efficiently and effectively. Further the MSPSFAC adjusts its membership as needed to insure that it is representative of the agencies it serves.

REGION 23 700 MHz PLAN APPENDIX V - EXISTING INTEROPERABILITY AGREEMENTS AND RULES

This Appendix Contains

1. General statewide interoperability rules promulgated by a series of agreements between the state of Mississippi and various agencies, entities and units of government.
2. General statewide interoperability rules promulgated through a series of mutual agreements.

Existing Interoperability Agreements

The Region 23 Planning Committee feels that it would be impractical to gather all of the interoperability agreements that may exist statewide. As soon as agencies begin requesting 700 MHz frequencies, these documents will have become outdated.

Therefore, we have included only existing plans that cover the whole of the State of Mississippi. However, as per the Region 23 Plan, applicants are required to provide existing interoperability information and to plan for interoperability for both pre and post 700 MHz system implementation.

APPENDIX V - EXISTING INTEROPERABILITY AGREEMENTS AND RULES

1. Interoperability Channels

1.1 Introduction

The ability for agencies to effectively respond to mutual aid requests directly depends on their ability to communicate with each other. Mississippi is subject to many natural disasters and contains regions and facilities which may be susceptible to a man-made disaster or weapons of mass destruction attack.

Mutual aid should be encouraged among agencies. This Plan seeks to facilitate the communications necessary for effective mutual aid. The administration of the 700 MHz interoperability channels is the responsibility of the State of Mississippi Statewide Interoperable Executive Committee (SIEC). If at any time both the State and the Region 23 Planning Committee agree to do so, then the Region 23 Planning Committee may assume this role and notify the FCC in writing of the change in administrative duties.

To provide interoperability with public safety units from throughout the State and Nation, all such 700 MHz. subscriber radios shall be equipped to operate on all of the NPSPAC 800 MHz conventional mutual aid channels in analog mode as follows:

NATIONWIDE 800 MHz. BAND PUBLIC SAFETY INTEROPERABILITY CHANNELS

FCC 800 MHz NPSPAC Band (Post-Re-banding)				
FREQ / FCC CHANNEL (SUBSCRIBER LOAD)		BASE, MOBILE, OR FIXED (CONTROL)	ELIGIBILITY / PRIMARY USE	COMMON NAME
RECEIVE	TRANSMIT			
851.0125	806.0125	Fixed-Mobile		8CALL90
	SIMPLEX	Base-Mobile	Any Public Safety Eligible	8CALL90D
851.5125	806.5125	Fixed-Mobile	Any Public Safety Eligible	8CALL91
	SIMPLEX	Base-Mobile		8CALL91D
852.0125	807.0125	Fixed-Mobile	Any Public Safety Eligible	8CALL92
	SIMPLEX	Base-Mobile		8CALL92D
852.5125	807.5125	Fixed-Mobile	Any Public Safety Eligible	8CALL93
	SIMPLEX	Base-Mobile		8CALL93D
853.0125	808.0125	Fixed-Mobile	Any Public Safety Eligible	8CALL94
	SIMPLEX	Base-Mobile		8CALL94D

Prior to re-banding above frequencies are 5 MHz higher. Common name would be ICALL, ITAC1, ITAC2, ITAC3, ITAC4 respectively.

APPENDIX V - EXISTING INTEROPERABILITY AGREEMENTS AND RULES

1.2 700 MHz Interoperability Channels

All mobile and portable units operating under this Plan must use the Channel Naming as outlined in the NPSTC Channel Naming Report. All mobile and portable units operating under this Plan and utilizing 700 MHz channels must be programmed for the Mandatory interoperability channels as specified in the State of Mississippi Tactical Interoperability Communications Plan as follows:

700 MHz INTEROPERABILITY CHANNELS				
* REGION 23 MANDATORY INTEROPERABILITY CHANNELS				
CHANNEL RECEIVE	CHANNEL TRANSMIT	BASE, MOBILE, OR FIXED (CONTROL)	ELIGIBILITY / PRIMARY USE	COMMON NAME
39-40	999-1000	Fixed-Mobile	Calling Channel *	7CALL50
	SIMPLEX	Base-Mobile		7CALL50D
119-120	1079-1080	Fixed-Mobile	General Public Safety Service *	7TAC55
	SIMPLEX	Base-Mobile		7TAC55D
319-320	1279-1280	Fixed-Mobile	Other Public Service *	7GTAC57
	SIMPLEX	Base-Mobile		7GTAC57D
303-304	1263-1264	Fixed-Mobile	Mobile Repeater (M03 Use Primary) *	7MOB59
	SIMPLEX	Base-Mobile		7MOB59D
681-682	1641-1642	Fixed-Mobile	Calling Channel *	7CALL70
	SIMPLEX	Base-Mobile		7CALL70D
761-762	1721-1722	Fixed-Mobile	General Public Safety Service *	7TAC75
	SIMPLEX	Base-Mobile		7TAC75D
937-938	1897-1898	Fixed-Mobile	Other Public Services*	7GTAC77
	SIMPLEX	Base-Mobile		7GTAC77D
881-882	1841-1842	Fixed-Mobile	Mobile Repeater (M03 Use Primary) *	7MOB79
	SIMPLEX	Base-Mobile		7MOB79D
	SIMPLEX	Base-Mobile		7FIRE84D

All such 700 MHz. subscriber radios shall also be equipped with the listed channels for operation in both the conventional repeater mode and the direct (talkaround) mode using P25 digital modulation with a NAC of \$293. These channels operate outside of the trunked system so they can be used in the direct mode for short range radio to radio anywhere or if the trunked system is down.

APPENDIX V - EXISTING INTEROPERABILITY AGREEMENTS AND RULES

1.2.1 Project 25 Common Air Interface Interoperability Channel Technical Parameters

Certain Common P25 parameters need to be defined to ensure digital radios operating on the 700 MHz Interoperability Channels can communicate. This is analogous to defining the common CTCSS tone used on NPSPAC analog Interoperability channels.

1.2.2 Network Access Code

In the Project 25 Common Air Interface definition, the Network Access Code (NAC) is analogous to 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.BACC contains NAC code table and other Project 25 Common Air Interface Reserve Values.

The use of NAC code \$293 is required for the 700 MHz Interoperability Channel NAC code.

1.2.3 Talkgroup ID

In the Project 25 Common Air Interface definition, the Talkgroup ID on conventional channels is analogous to the use of Talkgroups in Trunked radio. In order to ensure that all users can communicate, all units should use a common Talkgroup ID

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

1.2.4 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.

1.2.5 Message ID

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

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messages of \$80 and default key Id for unencrypted messages of \$0000. These same defaults may be used for 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. Due to the number of natural disaster type events that take place simultaneously in Mississippi that for interoperability use all radios should have the minimum number of National Interoperability Channels called for in the NCC guidelines. All of these National Interoperability Channels should have met NCC guidelines using common alphanumeric nomenclature.

1.3 Interoperability Channel Use

The state will equip three State owned Sites On Wheels (SOW) with radio equipment to support interoperability at remote locations. They will also support mutual aid task force events statewide. Almost all interoperability communication in this state use National Interoperability VHF, UHF channels, NPSPAC channels, or state wide mutual aid channels.

1.4 Calling Channels

The only means of monitoring calling channels throughout Mississippi is with the deployment of the three COWs referred to above or Agencies that have deployed interoperability channels. Any Agency deploying 700 MHz spectrum must install the National Interoperability Channels at their dispatch point and continuously monitor them for emergency calls.

1.5 Interoperability Talkgroups/Channels

1.5.1 700 MHz and 800 MHz Talkgroups/Channels

All 700 MHz radio subscriber units operating under the Mississippi State license or licensed under the Region 23 Plan are required to have the following 700 MHz. and 800 MHz. talkgroups/channels programmed by region:

See map for Region boundaries following this table.

ENTITY	AGENCY	TALKGROUP NAME	TALKGROUP ALIAS
INTEROPERABILITY	STATEWIDE	State Special Event Common	ST SE CMN
INTEROPERABILITY	STATEWIDE	State Special Event 1	ST SE 1
INTEROPERABILITY	STATEWIDE	State Special Event 2	ST SE 2
INTEROPERABILITY	STATEWIDE	State Special Event 3	ST SE 3
INTEROPERABILITY	REGION 1	Region 1 Special Event Common	R1 SE CMN
INTEROPERABILITY	REGION 1	Region 1 Special Event 1	R1 SE 1
INTEROPERABILITY	REGION 1	Region 1 Special Event 2	R1 SE 2
INTEROPERABILITY	REGION 1	Region 1 Special Event 3	R1 SE 3
INTEROPERABILITY	REGION 2	Region 2 Special Event Common	R2 SE CMN
INTEROPERABILITY	REGION 2	Region 2 Special Event 1	R2 SE 1

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ENTITY	AGENCY	TALKGROUP NAME	TALKGROUP ALIAS
INTEROPERABILITY	REGION 2	Region 2 Special Event 2	R2 SE 2
INTEROPERABILITY	REGION 2	Region 2 Special Event 3	R2 SE 3
INTEROPERABILITY	REGION 3	Region 3 Special Event Common	R3 SE CMN
INTEROPERABILITY	REGION 3	Region 3 Special Event 1	R3 SE CMN
INTEROPERABILITY	REGION 3	Region 3 Special Event 2	R3 SE CMN
INTEROPERABILITY	REGION 3	Region 3 Special Event 3	R3 SE CMN
INTEROPERABILITY	REGION 4	Region 4 Special Event Common	R4 SE CMN
INTEROPERABILITY	REGION 4	Region 4 Special Event 1	R4 SE CMN
INTEROPERABILITY	REGION 4	Region 4 Special Event 2	R4 SE CMN
INTEROPERABILITY	REGION 4	Region 4 Special Event 3	R4 SE CMN
INTEROPERABILITY	REGION 5	Region 5 Special Event Common	R5 SE CMN
INTEROPERABILITY	REGION 5	Region 5 Special Event 1	R5 SE CMN
INTEROPERABILITY	REGION 5	Region 5 Special Event 2	R5 SE CMN
INTEROPERABILITY	REGION 5	Region 5 Special Event 3	R5 SE CMN
INTEROPERABILITY	REGION 6	Region 6 Special Event Common	R6 SE CMN
INTEROPERABILITY	REGION 6	Region 6 Special Event 1	R6 SE CMN
INTEROPERABILITY	REGION 6	Region 6 Special Event 2	R6 SE CMN
INTEROPERABILITY	REGION 6	Region 6 Special Event 3	R6 SE CMN
INTEROPERABILITY	REGION 7	Region 7 Special Event Common	R7 SE CMN
INTEROPERABILITY	REGION 7	Region 7 Special Event 1	R7 SE 1
INTEROPERABILITY	REGION 7	Region 7 Special Event 2	R7 SE 2
INTEROPERABILITY	REGION 7	Region 7 Special Event 3	R7 SE 3
INTEROPERABILITY	REGION 8	Region 8 Special Event Common	R8 SE CMN
INTEROPERABILITY	REGION 8	Region 8 Special Event 1	R8 SE 1
INTEROPERABILITY	REGION 8	Region 8 Special Event 2	R8 SE 2
INTEROPERABILITY	REGION 8	Region 8 Special Event 3	R8 SE 3
INTEROPERABILITY	REGION 9	Region 9 Special Event Common	R9 SE CMN
INTEROPERABILITY	REGION 9	Region 9 Special Event 1	R9 SE 1
INTEROPERABILITY	REGION 9	Region 9 Special Event 2	R9 SE 2
INTEROPERABILITY	REGION 9	Region 9 Special Event 3	R9 SE 3