



Spectrum Repacking Briefing

*FCC Briefing
May 5, 2004
Washington, DC*



DTV Allotment/Assignment Principles (1992)

- ✓ Provide a DTV channel for each current Full Power Service station
- ✓ Replicate existing NTSC service area
- ✓ Minimize interference to existing service



Transition to a Final Plan: Channel Election

✓ Challenges in 2004

- Preserve the principles adopted in 1992
- Allow for an orderly transition to the final channel plan
- Minimize disruption to current *DTV operations*
- Give *DTV licensees* the option to return to their NTSC channels or to select a new channel if their NTSC channel is not available or their service area is infringed upon



MSTV Activities/Plan

- ▼ Initial Investigative Phase (Spring 02)
 - Determine technical constraints in developing a repacking and band-clearing plan
 - Determine broadcasters' channel election priorities and impact on channel selection and service availability
- ▼ Approval Phase (Winter 2004)
 - Lay out various repacking options and seek MSTV Engineering Committee and Board approval of an industry spectrum repacking proposal
- ▼ Socialization Phase (Spring 2004)
 - Other broadcasters (NAB, Public Broadcasters, etc.)
 - FCC and others



Background



Channel Election Dilemma

- Not all licensees have a channel election option
 - 80.3% of all DTV licensees *will have the option to select* between their analog or digital channel (licensees with two channels in-core)
 - 19.6% *will not have* a channel election option
 - 10.3% will have to go back to their NTSC channel (Licensees with DTV channel out-of-core)
 - 8.3% will have to stay on their current DTV channel (licensees with NTSC channel out-of-core)
 - 1% will have to get a new channel (both channels out-of-core)



Background

80.3%

1255 in-core licensees
(NTSC & DTV ch. 2-51)

8.3%

169 out-of-core DTV licensees
(NSTC ch. 2-51/DTV ch.52-69)

10.4%

188 out-of-core NTSC licensees
(NSTC ch. 52-69/DTV ch.2-51)

1%

15 out-of-core DTV licensees
(NSTC & DTV ch.52-69)



Channel Election Dilemma

- ✓ Licensees with both channels out-of core (1%) may infringe on the channel election option of the in-core licensees (80%) by either:
 - Taking away their channel election option, and/or;
 - Infringing on their DTV service
- ✓ Licensees that have to go back to their NTSC channel (10.3%) may not be able to replicate or maximize their service
- ✓ Licensees that have to stay on their current DTV channel (8.3%) may have their DTV service infringed upon



EXAMPLE

NTSC DTV

DMA

NTSC DTV

Philadelphia, PA	WCAU	10	67
Philadelphia, PA	WUVP	65	66
Philadelphia, PA	WPVI	6	64
Philadelphia, PA	WLVT	39	62
Philadelphia, PA	WHYY	12	55
Philadelphia, PA	WPHL	17	54
Philadelphia, PA	WNJN	50	51
Philadelphia, PA	WWSI	62	49
Philadelphia, PA	WFMZ	69	46
Philadelphia, PA	WMCN	53	44
Philadelphia, PA	WNJT	52	43
Philadelphia, PA	WTFX	29	42
Philadelphia, PA	WMGM	40	36
Philadelphia, PA	WYBE	35	34
Philadelphia, PA	WPSG	57	32
Philadelphia, PA	WPPX	61	31
Philadelphia, PA	WGTV	48	27
Philadelphia, PA	KYW	3	26
Philadelphia, PA	WTVE	51	25
Philadelphia, PA	WNJS	23	22
Philadelphia, PA	WNJB	58	8
Philadelphia, PA	WBPH	60	9

New York, NY	WNET	13	61
New York, NY	WLNY	55	57
New York, NY	WCBS	2	56
New York, NY	WFUT	68	53
New York, NY	WEDW	49	52
New York, NY	WABC	7	45
New York, NY	WNYW	5	44
New York, NY	WSAH	43	42
New York, NY	WXTV	41	40
New York, NY	WWOR	9	38
New York, NY	WNJU	47	36
New York, NY	WPXN	31	30
New York, NY	WFME	66	29
New York, NY	WNBC	4	28
New York, NY	WTBY	54	27
New York, NY	WNYE	25	24
New York, NY	WFTY	67	23
New York, NY	WLIW	21	22
New York, NY	WRNN	62	21
New York, NY	WMBC	63	18
New York, NY	WPIX	11	12



EXAMPLE

DMA

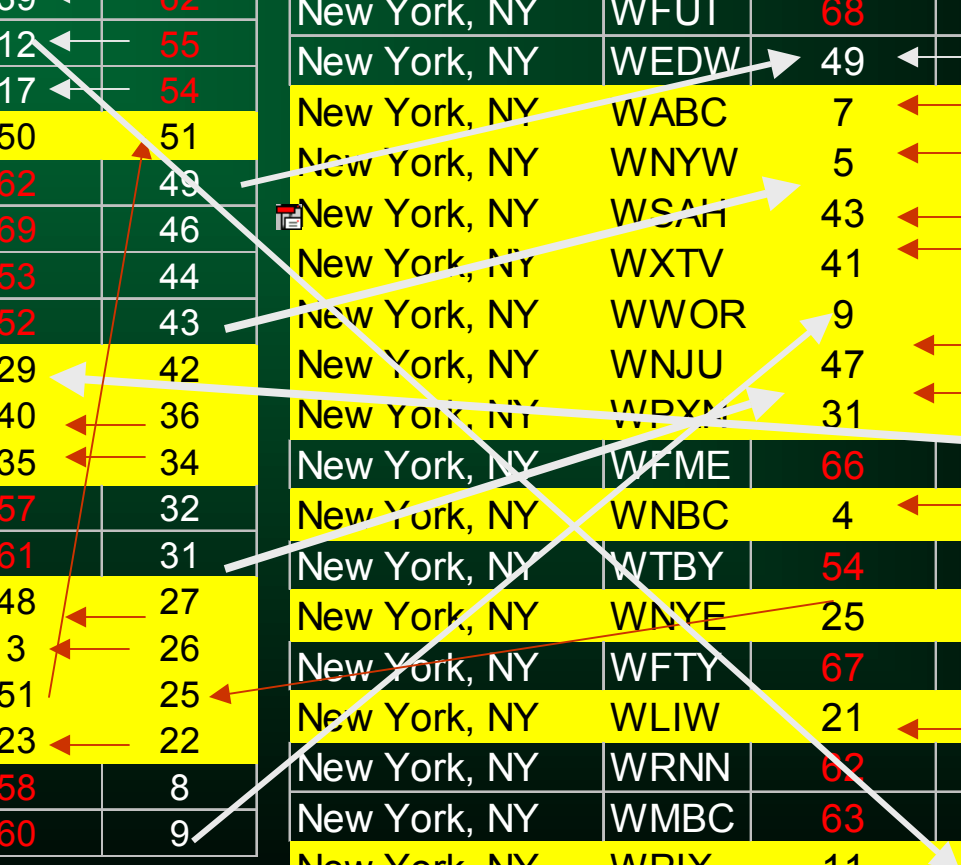
NTSC DTV

DMA

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New York, NY	WABC	7	45
New York, NY	WNYW	5	44
New York, NY	WSAH	43	42
New York, NY	WXTV	41	40
New York, NY	WWOR	9	38
New York, NY	WNJU	47	36
New York, NY	WPXN	31	30
New York, NY	WFME	66	29
New York, NY	WNBC	4	28
New York, NY	WTBY	54	27
New York, NY	WNYE	25	24
New York, NY	WFTY	67	23
New York, NY	WLIW	21	22
New York, NY	WRNN	62	21
New York, NY	WMBC	63	18
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Proposal



Development of Proposal

- ✓ MSTV staff evaluated a number of scenarios. Developed two separate proposals
 - In-core proposal
 - Out-of-core proposal
- ✓ MSTV Engineering Committee evaluated both proposals and focused on in-core proposal, developed it further and endorsed it
- ✓ MSTV Board approved proposal as a “Blueprint” for the industry on spectrum repacking



Attributes of Proposal

✔ Choice

- Allow **all licensees** to select their final DTV channel assignments

✔ Industry/FCC Partnership

- Preserve the FCC role of conflict resolution at the end of the process rather than have the FCC determine the details of the channel election process and criteria on infringement of service
- Involve of FCC in the process by requiring them to issue provisional licenses

✔ Orderly Transition

- Minimized disruption to existing DTV operations



Drawback of Proposal

- ✓ Too long/Possible Delay
 - Proposal requires too much time to implement (20 months)
 - Regulatory pressure to shorten process
 - Possible delay because of FCC involvement
- ✓ Uncertainty
 - Licensees may have to wait until end of process for guarantee of their service area



Observation

“Station investments in channel branding can be preserved through technology (PSIP), regardless of what channel is elected for final DTV operations”



Basic Principles

"DTV licensees who decide not to revert back to their NTSC channel will be protected to their maximized service areas."

"DTV licensees who elect to go back to their NTSC channel will be guaranteed protection to their replicated and maximized service areas, subject to interference criteria."



The Proposal

▼ *Step 1: Database Clean-Up*

- Create an accurate FCC database

▼ *Step 2: First Round of Election*

- Election for stations with two in-core channels
- Request for channels by stations with two out-of-core channels

▼ *Step 3: FCC Initial Action*

- Issue provisional authorizations for First Round requests provided that they do not cause or receive interference
- Return requests for channel election that cause or receive interference



Proposal (continued)

▼ *Step 4: Second Round of Election*

- In-core DTV stations that were not granted provisional authorizations could make a second request to revert back to their NSTC channels even though their service areas are affected
- Stations with two out-of-core channels that were not granted provisional authorizations could make a second request for new channels
- Requests for new channels by stations with one out-of-core channel

▼ *Step 5: FCC Action/Final Table*



Step 1:

Database Clean-Up

- ▼ *May 2004: FCC issues an Order*
 - Freeze request for DTV channel changes and/or new changes to existing facilities
 - Open a 45 days window for correcting errors/existing changes
- ▼ *September 2004: FCC issues a corrected DTV database*
 - All DTV eligible licensees and their *initial* protected service
 - Status of Canadian and Mexican interference coordination
 - DTV licensees file with FCC to reaffirm their final DTV service area
- ▼ *February 2005: FCC issues a final DTV database*
 - All DTV eligible licensees and their *final* protected service population based on their replicated or maximized DTV service commitments



Step 2: First Round of Election

▼ *Step 2(a): In-core election (June 2005)*

- Licensees with both analog and digital in-core channels file with the FCC whether they want to stay on their DTV channel or revert back to their NTSC channel

▼ *Step 2(b): Out-of-core election (July 2005)*

- Licensees with two out-of-core channels will have to file with the FCC and will indicate preference for *three* possible channels that they can use in their market
- Licensees with an out-of-core DTV channel will not have to file with the FCC but will be afforded protection on their NTSC channel to their DTV maximized service areas or NTSC Grade B whichever is greater



Step 2 (a): First Round of Election (June 2005)

ELECT

1255 in-core licensees
(NTSC & DTV ch. 2-51)

PROTECT

169 out-of-core DTV licensees
(NTSC ch. 2-51/DTV ch.52-69)

PROTECT

188 out-of-core NTSC licensees
(NTSC ch. 52-69/DTV ch.2-51)



Result of Step 2(a) Election

ELECT

1255 in-core licensees
(NTSC & DTV ch. 2-51)

Create a pool of
vacant channels



Step 3: FCC Initial Action

- ▼ *October 2005: FCC issues provisional authorizations for:*
 - In-core licensees who elected to go back to their NTSC channels if they were determined not to cause interference to any DTV licensees that have not filed, and there is no change to their DTV maximized service areas
 - Licensees with two out-of-core channels that can be accommodated in one of the three channel preferences they selected provided they do not cause any additional interference and if there are no changes to their maximized service areas
- ▼ *October 2005: FCC returns ungranted requests*
 - Requests for channel election that cause or receive interference will be returned



Step 2 (b): First Round of Election (July 2005)

ELECTED

1255 in-core licensees
(NTSC & DTV ch. 2-51)

PROTECT

169 out-of-core DTV licensees
(NTSC ch. 2-51/DTV ch.52-69)

PROTECT

188 out-of-core NTSC licensees
(NTSC ch. 52-69/DTV ch.2-51)

SELECT
3 new channels

15 out-of-core DTV licensees
(NTSC & DTV ch.52-69)



Step 3: FCC Interim Action

GRANT/RETURN

1255 in-core licensees
(NTSC & DTV ch. 2-51)

PROTECT

169 out-of-core DTV licensees
(NTSC ch. 2-51/DTV ch.52-69)

PROTECT

188 out-of-core NTSC licensees
(NTSC ch. 2-51/DTV ch.52-69)

GRANT/RETURN

15 out-of-core DTV licensees
(NTSC & DTV ch.52-69)



Result of FCC Action

GRANT/RETURN

1255 in-core licensees
(NTSC & DTV ch. 2-51)

Create a new pool of
vacant channels

GRANT/RETURN

15 out-of-core DTV licensees
(NTSC & DTV ch.52-69)



Step 4: Second Round of Election

- ▼ *December 2005: Election for remaining licensees*
 - In-core licensees that still want to revert back to their NTSC channel even though their service areas are affected
 - Licensees with two out-of-core channels who were not accommodated in the first round will again select three new channels from that market. The selection should be based on the result of the first round of election
 - Licensees with one channel out-of-core may request a third channel
 - In-core licensees with two low VHF channels will be permitted to request a third channel



Step 4: Second Round of Election

RESUBMIT/
ELECT

(X) in-core licensees
(NTSC & DTV ch. 2-51)

Option to SELECT
a new channel

169 out-of-core DTV licensees
(NSTC ch. 2-51/DTV ch.52-69)

Option to SELECT
a new channel

188 out-of-core NTSC licensees
(NSTC ch. 52-69/DTV ch.2-51)

RESUBMIT/
SELECT
3 new channels

(X) out-of-core DTV licensees
(NSTC & DTV ch.52-69)



Step 5(a): FCC Action/Final Table

Year 2006: MSTV proposes that mutually exclusive requests are resolved taking into account the following criteria:

▼ Early Adopter Preference

- Length of time broadcasting in digital
- Population served with digital signal
 - Absolute number of people covered
 - Percentage of the replication population covered
- Etc.

▼ Low VHF Preference

- Stations with two low VHF channel
- Low VHF station and another out-of-core station



Step 5(b): FCC Action/Final Table

▼ Year 2006: FCC issues final table

- Resolve conflicts and issue final licenses.
Modify existing interference rules on a case-by-case to insure, to the extent possible, that all licensees are accommodated with at least replicated service



Thank You



What is PSIP?

PSIP encoding technology will allow you to select the channel position of your DTV signal on DTV sets (e.g., a station operating on DTV Channel 48 who transmits a PSIP code for Channel 7 will appear to the viewer to be on Channel 7)



PSIP Selection Priorities

- ✓ A station should be permitted to select its PSIP code
 - Historic analog channel
 - Transitional DTV channel
 - Final DTV channel
- ✓ Where there are conflicts between the PSIP codes, the station with the greatest investment in branding the channel should have priority:
 - A station electing the PSIP code for its historic channel should have priority over a station seeking the code for either its transitional or its final DTV channel
 - A station electing the PSIP code for its transitional DTV channel should have priority over a station seeking the code for its final DTV channel