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August 23, 2007

BY ELECTRONIC FILING

Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: ***Ex Parte Notification***
CS Docket Nos. 00-96, 00-2

Dear Ms. Dortch:

In accordance with Section 1.1206 of the Commission's rules, this is to inform you that yesterday, Stacy Fuller and undersigned counsel on behalf of The DIRECTV Group, Inc. ("DIRECTV"), met with Rick Chessen, Senior Legal Advisor to Commissioner Copps, to discuss the enclosed materials. In particular, the discussion focused on how DIRECTV provides local-into-local services and the potential impact on those services of various potential rules applicable to broadcast signal carriage. We stressed that, if the rules are not properly crafted, DIRECTV would be able to provide local-into-local service in only a small handful of markets.

Sincerely yours,

\s\

William M. Wiltshire

Enclosure

cc: Rick Chessen

Satellite Carriage of Digital Local Broadcast Signals

DIRECTV, Inc.

August 2007

DIRECTV's Plan for Local HD

- DIRECTV has invested billions to make the transition from analog to digital in compliance with carry-one, carry-all
- DIRECTV has initiated local HD carriage using two SPACEWAY satellites
  - 60 markets, covering 70 percent of U.S. television households
- DIRECTV has launched the first of two new satellites (D10 and D11), culminating a more than five year effort
  - Satellite and set top box design began in early 2003; Satellite construction began in 2004
  - Satellites can serve 100 markets in HD
  - HD carry-one, carry-all based on TV stations existing when satellite was designed

Key Differentiators Between Satellite and Cable

Cable	Satellite
• Local	• National
• Analog	• Digital
• Terrestrial	• Space
• Wireline	• Wireless

Impact of Digital Transition Differs Between Cable and Satellite

Cable

- Analog signal retransmitted using 6 MHz of cable bandwidth – no digital signal processing
- HD digital signal transmitted with digital signal processing
- HD requires only half as much cable bandwidth or less as analog signal

Satellite

- Analog signal digitized, then compressed and multiplexed
- HD digital signal is much larger
- Because satellite *already* uses digital processing, HD signal requires six times as much capacity as analog signal

Broadcast Technology Basics

- The NTSC Analog signal is transmitted in 6 MHz of spectrum
- The ATSC digital signal is transmitted at 19.4 Mbps

Satellite Basics

- DIRECTV uses both Ku-band DBS and Ka-band satellites
- Limited number of orbital locations and transponders available
- “CONUS” beams cover the entire contiguous United States plus Alaska and Hawaii
- Spot beams cover smaller areas and achieve efficiency of frequency reuse
  - Like multiple FM stations on 97.1 nationwide
  - Key advance enabling local-into-local service

Satellite Transponder/Spot Beam Capacity

- Each Ku-band DBS transponder can carry roughly 30 Mbps of data
- Each Ka-band transponder can carry roughly 30-40 Mbps of data
- Each spot beam (Ku-band DBS and Ka-band) has one or two transponders

Digital Signal Processing

- From day one, DIRECTV has used these techniques to carry <u>every</u> channel (from Fox 5 to ESPN to HBO)
  - <u>Compression</u>: removing unneeded bits so that less data must be transmitted to convey information
    - *E.g.*, MPEG-2, MPEG-4 (advanced derivative of MPEG-2)
  - <u>Coding</u>: processing transmitted data to enhance signal availability
  - <u>Modulation</u>: technique for embedding digital information in a carrier wave
    - *E.g.*, QPSK (legacy system), 8PSK (new DVB-S2 system)
  - <u>Statistical Multiplexing</u>: combining multiple streams of information into a single stream and taking advantage of the varying bit rate demands of individual streams
- DIRECTV's picture quality is the industry standard

Digital Signal Processing Makes Local Service Possible

- DIRECTV can fit about 12 SD signals into each Ku-band DBS transponder
- DIRECTV can fit only 2 HD signals into each Ku- band DBS transponder, and 3-5 HD signals on each Ka-band transponder
- DIRECTV uses one or several spot beams to cover individual markets (such as Washington DC or Baltimore)
- DIRECTV complies with SD carry-one, carry-all (and has designed its systems intending to comply with HD carry-one, carry-all in the future based on stations licensed in 2004 when D10 and D11 were designed)

Congress Explicitly Endorses Digital Signal Processing

- Sec. 2005(b)(3) of Local TV Act: the Commission "may not restrict [satellite] from using any reasonable compression, reformatting, or other technology"
- SHVIA conferees "urge the FCC . . . to not prohibit satellite carriers from using reasonable compression, reformatting, or similar technologies to meet their carriage obligations"

Satellite Carriage and the "All Content Bits" Proposal

- The Commission is considering how to define "material degradation" for purposes of the cable must-carry rules
- One proposal is to require cable operators to carry "all content bits" of broadcasters' digital program stream
- If applied to DIRECTV, such a rule would mean <u>the end of local service</u>

“All Content Bits” Changes Everything

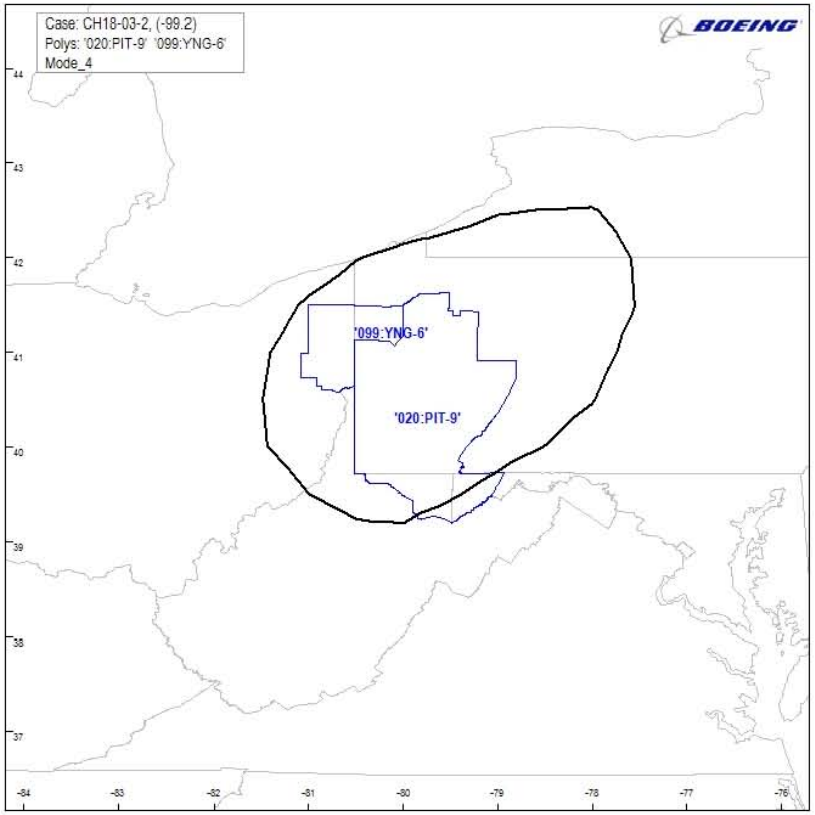
- All content bits would mean no compression
- *E.g.*, DIRECTV would have to allocate a full 19.4 Mbps for each station
- At 19.4 Mbps per station, DIRECTV could fit only <u>one or two</u> stations’ signals into any given spot beam
  - Analysis would not change materially if station allocated around half of 19.4 Mbps for a single HD stream

“All Content Bits” Would Mean No Local Service

- DIRECTV could carry only a few stations per market
- DIRECTV could not comply with carry-one, carry-all except in a handful of the very largest markets (using CONUS beams only)
- DIRECTV would have to drop local service in every other market
- Billions of dollars in spot-beam satellites would be rendered effectively useless

“All Content Bits” Rule in Action: Pittsburgh

- Today, one spot beam on D11 will cover Pittsburgh (9 stations) and Youngstown (5 stations)
- Just enough capacity to carry all 14 local stations in HD format
- With “All Content Bits,” beam can carry only two stations’ digital signals
- DIRECTV must drop both markets



Satellite Carriage and a "Dual Carriage" Rule

- A "dual carriage" rule would likely require DIRECTV to dedicate both SD (Ku-Band DBS) <u>and</u> HD (Ka-band) capacity for each station carried
- The more capacity DIRECTV must devote to each station, the fewer SD and HD markets can be launched
  - Also takes capacity away from CONUS services
- Such a rule would also prevent DIRECTV from launching straight-to-HD markets

Conclusion

- If the Commission wishes to preserve local broadcast service by satellite, it must not implement an “all content bits” rule
- If the Commission wishes to maximize the number of local markets served (and maximize national HD service), it must not implement dual carriage for satellite