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JUN 21 2004
Policy Branch
International Bureau

June 15, 2004

By Hand

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, N.W.
Washington, DC 20554

Re: *Ex Parte* Communication -- Report No. SPB-196; SAT-PDR-20020425-00071

Dear Ms. Dortch:

On June 14, 2004, Nancy Eskenazi, Vice President and Associate General Counsel of SES AMERICOM, Inc. ("SES AMERICOM"); John Nelsen, Vice President, Satellite Market Development, SES AMERICOM; Richard Langhans, Vice President, Technology, Residential Satellite Services; Kimberly Baum, Manager, Satellite Market Development, SES AMERICOM; and the undersigned, attorney for SES AMERICOM, met in person with Thomas Tycz, John Martin, Rockie Patterson, Chip Fleming, and JoAnn Lucanik, all of the International Bureau, for the purpose of discussing matters identified in the attached document, which was distributed at the meeting.

In the presentation, SES AMERICOM described Direct Broadcast Service ("DBS")/Direct-to-Home ("DTH") satellite operations in the European market, where DTH satellites operate successfully with co-coverage neighbors spaced less than or equal to 4.3°. The analysis focused on the aggregate interference into the Astra 1G DTH satellite from closely-spaced co-coverage satellites. The presentation computed the interference from two Eutelsat satellites (2.3 degrees and 3.2 degrees from the Astra 1G satellite) providing single channel per carrier ("SCPC") services, and the Astra 3A satellite (4.3 degrees from the Astra 1G satellite) providing direct-to-cable service, but with radio frequency characteristics similar to the Astra 1G DTH operations. The

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European DBS/DTH Satellite Operations

June 14, 2004

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DBS/DTH Operations in Europe

- European satellite operators have established open architecture platforms providing capacity to retail DBS/DTH service providers (e.g. BSkyB, Canal Satellite, Digital+).

- DBS/DTH offerings are both analog and digital. Some offerings are free to air (e.g. ASTRA German language analog services at 19.2°E).

- Retail DBS/DTH service providers control the transponder loading of their bouquets independent of the satellite operator.
  - The capacity at an orbital location is split between service providers.
  - Full transponder users are given full power and bandwidth of the transponders without restrictions (with comparable EIRPs to the neighboring satellites).

- Satellite operators do provide guidelines / standards for ground communications equipment (e.g. ASTRA antenna standard and installation guidelines.) Installation is a mix of professional and do-it-yourself.

European Satellite Operators Have Less Direct Control Than US Counterparts

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DBS/DTH Spectrum Usage in Europe

- Fungible use of Ku spectrum: unplanned FSS (standard and international bands), BSS (Appendix 30/30A), planned FSS (Appendix 30B) – (e.g. ASTRA at 19.2°E & Eutelsat at 13°E)

- BSS utilization is based both on modification at planned assignment locations and modifications of the plan based on reduced spacing.

- All Ku Band operations in Europe today are linearly polarized including BSS.

- Co-coverage satellites are located at intervals as close as 2.3° to 4.3°.

- Satellite coverage is predominately pan-European without use of spot beams. Some regional beams are in operation (e.g. NSAB at 5°E with coverage of the Nordic market).

- Spectrum licensed by multiple administrations: Germany, Luxembourg, France, Spain, Sweden, United Kingdom and others

European Operators Use the Entire 2 GHz of Ku Spectrum for DBS/DTH

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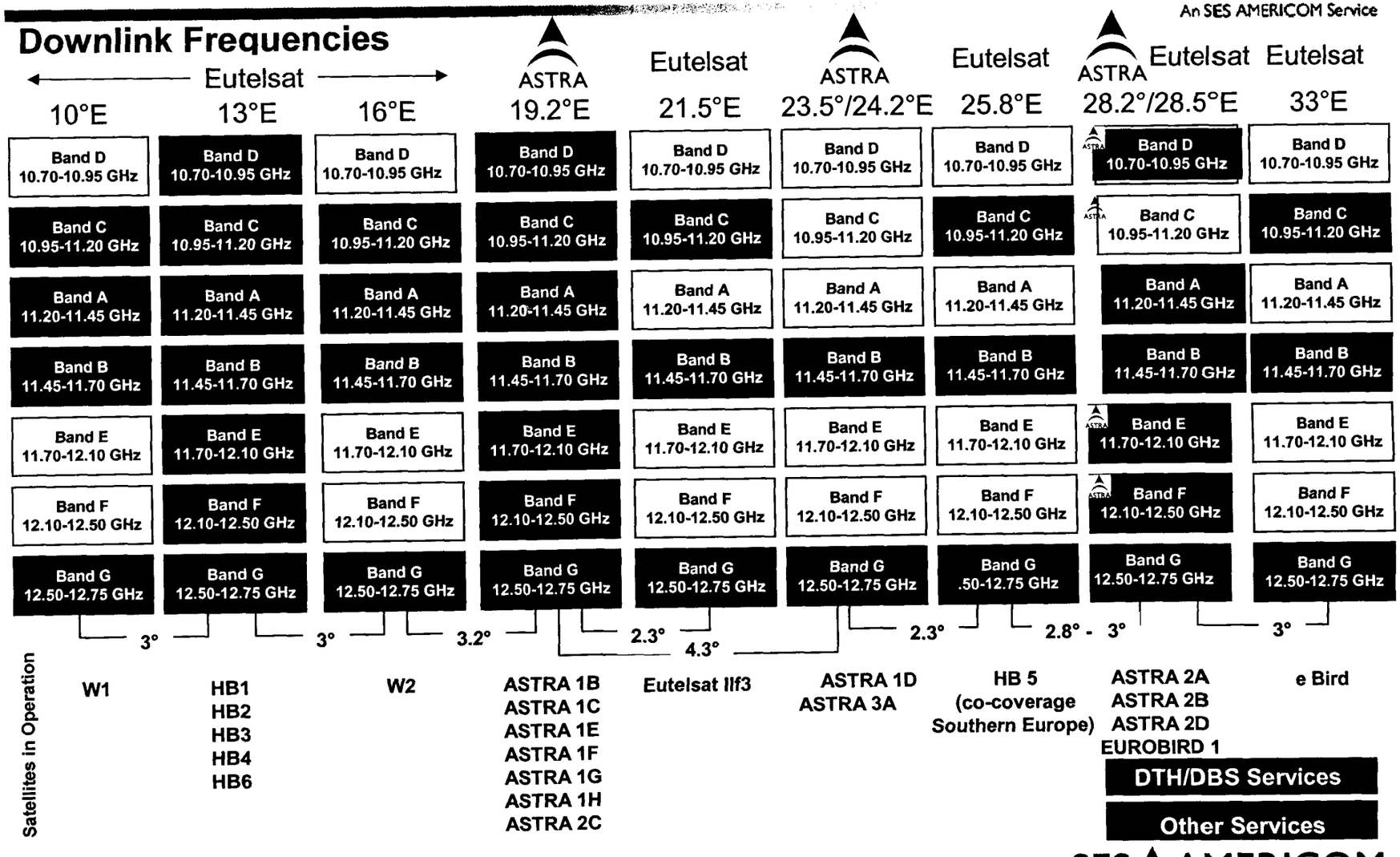
Downlink Frequencies



DTH/DBS Services Provided With as Little as 4.3° Spacing

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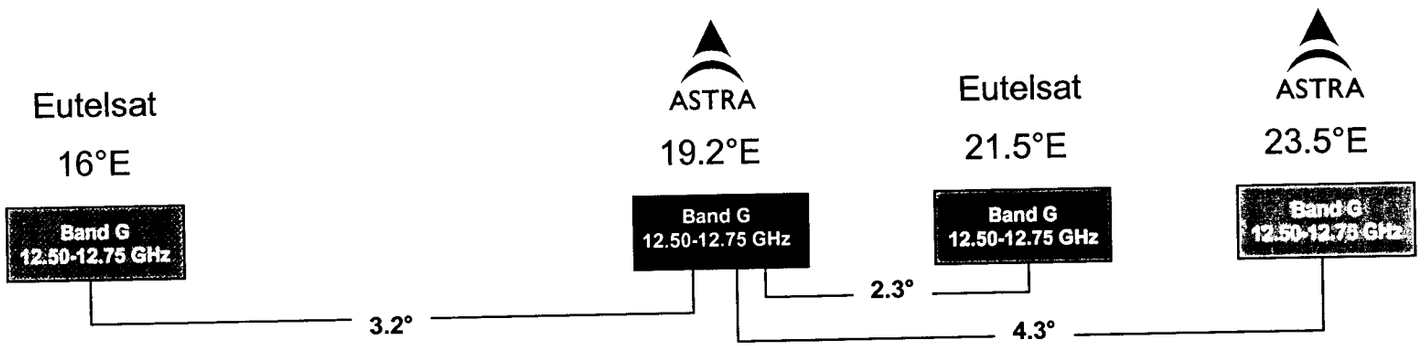
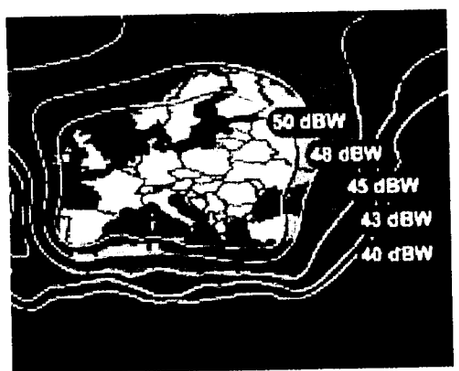
European DBS/DTH Example



DTH to 29.5 million users

W2



Source: Eutelsat promotional material

ASTRA 1G

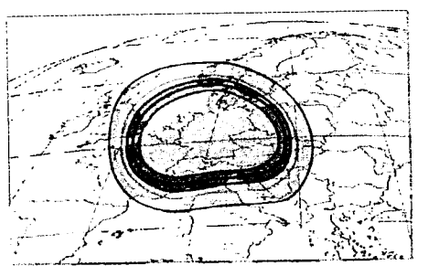
Dish sizes: 50 cm | 60 cm | 75 cm | 90 cm | 120 cm

Source: SES Astra web site

ASTRA 3A

EIRP (dBW): 52 dBW | 51 dBW | 50 dBW | 49 dBW | 47 dBW | 45 dBW

ASTRA 3A



Source: SES Astra web site

Band G Environment for 19.2° Closest to SES' North America Proposal

Calculation of C/I in ≤ 4.3° Spacing Environment

Assumptions

- Wanted orbit location: 19.2°
- Receive earth station antenna size: 60 cm in diameter
- Topocentric angle: ~ 1.1 * (geocentric separation – 0.1° total stationkeeping tolerance)
- Mispointing: For illustrative purposes, a 0.4° mispointing of the earth station towards 23.5° E
- Earth station antenna pattern: DBL

Interference calculation into 19.2°E from satellites spaced at 4.3 degrees and less:

- Unlike situation around 105.5 W in the US, orbital spacing is not uniform
  - Three satellites at "reduced spacing"—16° E, 21.5° E and 23.5° E—must be considered to determine the aggregate C/I
- General equations:

  Co pol C/I = Peak e/s gain – off-axis gain + Δ sat EIRP + Δ transponder bw + Δ power density

  Single entry C/I = Co pol C/I – 0.4 dB reduction due to cross pol

  Overall C/I = Power Σ of single entry C/I from 23.5° E, 21.5° E and 16° E

Calculation of C/I in < 4.3° Spacing Environment

Case	23.5 --> 19.2	16 --> 19.2	21.5 --> 19.2
Nominal topocentric angle, degrees	4.6	3.4	2.4
Topocentric angle w/ mispointing, degrees	4.2	3.8	2.0
Peak gain, dBi	36.0	36.0	36.0
Off-axis co-pol gain, dBi	13.4	14.5	28.5
Delta EIRP, dB	0.0	5.0	10.0
Difference in transponder bandwidth, dB	1.4	4.4	1.4
Decrease in power density due to carrier spacing, dB	0.0	0.5	0.5
Co pol C/I, dB	23.7	31.1	19.1
Total s.e. C/I (co&cross-pol), dB	23.3	30.7	18.7
Aggregate C/I, dB			17.2

Aggregate C/I in reduced spacing environment: 17.2 dB

Additional results:

- With 50 cm earth stations and the same assumptions used above, the reduced spacing environment yields aggregate C/I's as low as 15 dB

Summary

- Satellites providing DBS/DTH service are located at close intervals with as little as 2.3° separation from other satellites, and 4.3° from satellites with similar characteristics
- Astra provides high availability service to millions of households in this environment–aggregate C/I levels as low as 15 to 17 dB
- Intersystem coordination has been achieved under ITU rules for both BSS and FSS frequencies in a fiercely competitive marketplace

European Experience Supports Viability of Reduced Spacing for North America