

BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554

*Application of* )  
 )  
EchoStar Communications Corporation, )  
General Motors Corporation, )  
Hughes Electronics Corporation, )  
 )  
Transferors ) CS Docket No. 01-348  
 )  
and )  
 )  
EchoStar Communications Corporation )  
 )  
Transferee )  
 )  
For Authority to Transfer Control )

REPLY DECLARATION OF WALTER L. MORGAN ON BEHALF OF THE  
NATIONAL RURAL TELECOMMUNICATIONS COOPERATIVE

In Response to the Declaration of Richard Barnett on behalf of  
EchoStar Communications Corporation, General Motors Corporation, and Hughes  
Electronics Corporation

## **DECLARATION OF WALTER L. MORGAN**

My name is Walter L. Morgan. I am a satellite engineer with the Communications Center in Clarksburg, Maryland. I am making this Declaration on behalf of the National Rural Telecommunications Cooperative (“NRTC”) in response to the February 25, 2002 Opposition of EchoStar Communications Corporation, Hughes Electronics Corporation and GM Holdings, Inc. (collectively, New EchoStar) (Opposition) and the Declaration of Richard Barnett appended thereto (Barnett Declaration). I hereby certify under penalty of perjury that the statements of fact in this Declaration are true and correct to the best of my knowledge, information and belief.

### **Introduction**

In my earlier Declaration that supported NRTC’s Petition to Deny New EchoStar’s Merger Application,<sup>1</sup> I demonstrated the following:

- EchoStar and DirecTV could each, standing alone, provide all eligible local television channels to 160-187 of the 210 Designated Market Areas (DMAs) using existing satellites, spot beam satellites each had ordered or recently launched, plus one additional spot beam satellite each. With expected advances in technology, the remaining DMAs could be served by using spot-beam technology with additional frequencies, or by rearranging the spot-beams by some other means.
- the ability to provide such local-into-local service is based on information from public sources and, where information was not available, conservative assumptions were made.

In the Opposition, New EchoStar now claims, for the first time, that it will provide local-into-local service to all 210 DMAs. New EchoStar makes reference to an application filed with the FCC jointly by EchoStar and DirecTV which purports to show that the launch of just one more satellite will enable coverage to all 210 DMAs.

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<sup>1</sup> Declaration of Walter L. Morgan, Exhibit O to NRTC Petition (Morgan Declaration).

Although they now admit that nationwide provision of local-into-local service is possible, EchoStar and DirecTV nevertheless take issue with certain aspects of the analysis contained in my earlier Declaration. In general, this criticism relies on information that is contradicted by their own FCC filings, mischaracterizes the nature of my analysis and misstates important facts. Moreover, the Applicants offer no concrete evidence of their own, and thus have not met their burden of proof of showing that the merger is necessary to achieve local-into-local coverage to all 210 DMAs. Indeed, Dr. Barnett admits that in the time available, he has not been able to replicate the detailed analysis I presented in my earlier declaration.

One critical point must be made. Dr. Barnett claims that the “exotic” design that I propose is “not viable.”<sup>2</sup> But, just a few short months ago, the Applicants themselves claimed the ability of the merged company to provide local television channels service to 210 markets also was not viable. Then, almost as if by magic, the Applicants designed and proposed a single additional satellite that would allow them to provide local channels to all markets. If EchoStar and DirecTV can design a new satellite in just eight weeks, then the proposals in my earlier Declaration – which are not extraordinary to begin with – must be technically viable, too.

**I. The Satellite Design I Proposed Is Technically Viable.**

In stating that EchoStar and DirecTV could each provide local-into-local service to all 210 DMAs, I used information provided by EchoStar and DirecTV.<sup>3</sup> Despite this, they characterize the satellites I proposed for local service as “super-satellites that would push beyond the mass and power limits of commercial satellite technology, and that would require a super-sized antenna as well as significant advances in antenna design and deployment.”<sup>4</sup> These general

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<sup>2</sup> Barnett Declaration at p. 8.

<sup>3</sup> See Morgan Declaration at pp. 3-5.

<sup>4</sup> Barnett Declaration at p. 19.

statements contain no further explanation or factual support to prove the point. Indeed, the opposite is true.

***Antenna Design.*** Dr. Barnett states that the antennas required for the satellite discussed in the Morgan Declaration “could not be accommodated on a single spacecraft.”<sup>5</sup> This statement disregards my earlier Declaration in which I said that “satellites with very small spot beams (such as Thuraya and ACES) have flown designs with over 100 beams.”<sup>6</sup> Also, the Astrolink satellites are designed to carry 12 separate telecommunications antennas, including two ISL reflectors, on a single A2100 class spacecraft.

***Satellite Capacity.*** With regard to the EchoStar 7 and EchoStar 8 planned spot beam satellites and the other satellites in the EchoStar fleet, the Applicants challenge my statement that these satellites could serve 80 DMAs. My conclusion was based on information in the Joint Engineering Statement accompanying the Merger Application indicating that these satellites each would use five DBS frequencies. I further assumed that a new satellite would use three frequencies, yielding a total of 13 frequencies.

I did not, as Dr. Barnett implies, assume that 16-19 frequencies would be required, which would have reduced DirecTV’s capacity to carry national programming. On the contrary, great care was taken to preserve, not reduce, the national programming.<sup>7</sup> Appendices E and F to my Declaration showed one possible configuration of these two satellites that would enable local-into-local service to 80 DMAs.

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<sup>5</sup> *Id.* at p.25.

<sup>6</sup> Morgan Declaration at p. 23.

<sup>7</sup> *Id.* at p. 5 (item 11).

In any event, Dr. Barnett makes no effort to contradict my conclusions. Indeed, he states that my conclusions are “relatively accurate.”<sup>8</sup>

***Number of Frequencies.*** The Applicants also take issue with my conclusions about the number of frequencies to be used for local programming on DirecTV-4S and DirecTV-7S spot beam satellites. I concluded, based on statements of the satellite manufacturer, that each of the satellites would use six frequencies for local service (for a total of 12). The new all-spot beam satellite that I proposed needed just three frequencies. In the case of EchoStar the sum of the spot beam frequencies on EchoStar-7, -8 and my new satellite was 13. Dr. Barnett states without any support and contrary to my declaration, that there would be 16 to 19 frequencies needed by each operator for local service.<sup>9</sup> Significantly, Dr. Barnett does not dispute my conclusion that there would be 80 (EchoStar) or 98 (DirecTV) spot beam transponders for local service, a more important element necessary to determine satellite capacity. Nevertheless, Dr. Barnett ultimately concludes that my analysis of the capacity of DirecTV-4S and DirecTV-7S to provide local-into-local service is accurate.<sup>10</sup>

***Compression Ratio.*** Dr. Barnett contends that the 12:1 compression ratio is not possible.<sup>11</sup> Yet, Dr. Barnett later concedes this point, admitting that certain transponders are, in fact, already transmitting at 12:1 compression, including local channels (as Dr. Barnett admits) and premium HBO channels (as I physically observed).<sup>12</sup> Moreover, contrary to Dr. Barnett’s mistaken belief, my analysis did in fact account for the fact that this 20 percent of the spectrum is

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<sup>8</sup> Barnett Declaration at p. 20.

<sup>9</sup> *Id.* at p. 8.

<sup>10</sup> *Id.*

<sup>11</sup> *Id.* at p. 10.

<sup>12</sup> Appendix A of the Morgan Declaration demonstrated DirecTV’s use of 12:1 compression.

already in use and thus allocated for non-video uses.<sup>13</sup> Double counting this 20 percent is unwarranted and improper.

***Frequency Reuse.*** Dr. Barnett also questions my use of a 17:1 frequency reuse plan for EchoStar-7 and EchoStar-8 and a 15:1 frequency reuse plan for DirecTV-4S and DirecTV-7S.<sup>14</sup> Dr. Barnett does not offer a contrary ratio, and also ignores the fact that higher ratios have been achieved in lower bands (L-band) and are being planned in higher bands (Ka-band). It is not a stretch to conclude that the 17:1 and 15:1 frequency reuse plans could be employed in the Ku-band, if the Applicants so choose.

## **II. The Satellite Design I Proposed Is Commercially Reasonable.**

In the Morgan Declaration, I concluded that EchoStar and DirecTV would need to launch only one additional spot beam satellite, beyond the two each has in orbit or in the pipeline, in order for each of them to provide local service to all 210 DMAs (assuming expected technological advances). I further stated that the cost of the additional satellite would be about \$200 million, based on factual historical costs of similar DirecTV and EchoStar satellites which I cited.<sup>15</sup>

Dr. Barnett does not challenge these figures, nor the financial ability of each company to design, construct and launch the satellites I discussed. Rather, the Applicants rely on their economist, Dr. Robert D. Willig, to opine on satellite costs. In his Declaration, Dr. Willig notes that the price to construct, launch and insure a spot beam satellite is typically between \$220 and

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<sup>13</sup> See Barnett Declaration at 11. Dr. Barnett also states that one-third of a transponder is used for software downloads to receivers, leaving less capacity for local-into-local programming. *Id.* at p. 12. This would be an occasional need that would not limit local-into-local frequencies. Furthermore, it is already included in the 12:1 compression ratio.

<sup>14</sup> *Id.* at 23.

<sup>15</sup> See Morgan Declaration at pp. 35-36.

\$300 million.<sup>16</sup> He provides no authority for this statement. Taking Dr. Willig at his word, the disparity at issue is the difference between two satellites (as I suggested) and one satellite (as proposed in the joint application) – a cost up to \$300 million.

Dr. Willig states that:

[a]bsent the merger, expanding local service to all 210 DMAs would not be profitable. That is, the DBS firms would be unlikely to forgo so many national channels (or the advanced services that could be carried in lieu of these channels) and would be unlikely to recover the costs of constructing, launching and insuring the new satellite, along with the other various costs associated with introducing local service.<sup>17</sup>

Here again, Dr. Willig offers no basis for his statements. He has not shown that the difference in costs between the satellites I discussed and the satellite they propose is so prohibitive that it will render service to all markets “unprofitable.” He also assumes that national programming would need to be sacrificed in order to provide local service to all DMAs; my Declaration showed that this would not be necessary. Likewise, Dr. Willig’s claim that the provision of local service would preclude the transmission of unspecified “advanced services” presupposes that advanced services will occupy so much capacity that local channels cannot be transmitted. For example, pay-per-view currently requires the satellite carrier to dedicate multiple frequencies to deliver identical copies of the same movie over multiple timeframes and multiple days. With the personal video recorder (“pvr”) technology, these services could be downloaded once via the satellite and stored on the hard drive of the pvr, making dedication of large amounts of pay-per-view satellite capacity unnecessary. The freed-up spectrum can be used for his new services. He also assumes that consumers would demand such “advanced services”

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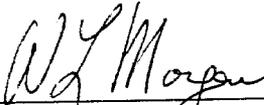
<sup>16</sup> See Willig Declaration at p. 10. Dr. Willig includes the cost of insurance, which is about 10-20 percent of the total cost. I note that recently EchoStar may not have insured one of its satellites.

<sup>17</sup> *Id.* at pp. 10-11.

more than local television service, or that the profits would be greater. No proof accompanies his conclusions.

### Conclusion

The Morgan Declaration sets forth a technically viable and commercially reasonable means by which each of EchoStar and DirecTV can provide all local television stations to all 210 DMAs.

  
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Walter L. Morgan  
  
March 27, 2002  
Date