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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

Federal Communications Commission  
Office of Secretary

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APR 22 1998

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| In the Matter of:              | )                                 |
|                                | )                                 |
| EchoStar Satellite Corporation | ) File No. DBS-88-01/68-SAT-ML-96 |
| Directsat Corporation          | ) File No. DBS-88-02/6-SAT-ML-97  |
| EchoStar DBS Corporation       | ) File No. DBS-74-SAT-P/L-96      |
|                                | )                                 |
| Application for Authority to   | )                                 |
| Make Minor Modifications to    | )                                 |
| Direct Broadcast Satellite     | )                                 |
| Authorizations, Launch and     | )                                 |
| Operation Authority            | )                                 |
|                                | )                                 |
| EchoStar Satellite Corporation | ) File No. 155-SAT-STA-96         |
| Directsat Corporation          | ) File No. 156-SAT-STA-96         |
|                                | )                                 |
| Application for Special        | )                                 |
| Temporary Authority            | )                                 |
|                                | )                                 |
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**RESPONSE TO SUPPLEMENTAL FILING**

EchoStar Satellite Corporation, Directsat Corporation and EchoStar DBS Corporation (collectively "EchoStar") hereby respond to the Supplemental Filing of Tempo Satellite, Inc. ("Tempo") in the above-captioned proceedings.<sup>1</sup>

<sup>1</sup> By separate Response dated April 6, 1998, EchoStar responded to the accompanying Motion for Leave to File Supplement of Tempo. In its Response, EchoStar indicated that it would be filing its factual response to Tempo's Supplemental Filing no later than April 15, 1998.

Initially, it must be noted that the allegations contained in Tempo's filing bear no direct relationship to EchoStar's pending requests to modify its authorizations for Direct Broadcast Satellite ("DBS") service at 119° W.L. and 148° W.L., and its application to launch EchoStar 4 to the 119.2° W.L. orbital location.<sup>2</sup> In fact, if the Commission were to grant these requests, many of the purported concerns raised by Tempo would become moot. Thus, EchoStar 1 would be moved promptly to the 148° W.L. orbital location far away from Tempo's satellite at 118.8° W.L. Directsat 1 (EchoStar 2) then could be moved to 118.8° W.L.<sup>3</sup>

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<sup>2</sup> There should be no confusion as to the orbital position requested by EchoStar for EchoStar 4. EchoStar has applied for authority from the Commission to launch EchoStar 4 into the 119.2° W.L. orbital slot. See EchoStar Application for Minor Modifications at i, ii, 2, 4, 6, 9, 13; EchoStar Reply at iii. Of course, this does not preclude a later request to move this satellite to another orbital location if circumstances so warrant; but any such request should be considered on its own merits if and when it is made.

<sup>3</sup> At the same time, EchoStar does not preclude the possibility that it may request Special Temporary Authority to locate EchoStar 4 and EchoStar 2 at 119.05° W.L. and 118.95° W.L. respectively. EchoStar expects that such a request would be judged on its own merits by the Commission. EchoStar also notes that, in commenting on the above-captioned applications for Special Temporary Authority ("STA"), Tempo indicated that it prefers the relocation of EchoStar 2 to an orbital slot further away from Tempo's 118.8° W.L. location in order to avoid the continuous coordination of co-located satellites. Specifically, Tempo has stated on a number of occasions that it has "no objection to EchoStar's request to relocate USABSS-4 [EchoStar

(Continued)

Irrespective of the outcome of the above-captioned proceedings, EchoStar herein addresses the allegations raised by Tempo in its Supplemental Filing. At the outset, EchoStar wants to assure the Commission that it takes these allegations as to the position of its satellites with the utmost seriousness. In order to get to the heart of the matter, EchoStar's Senior Vice President and General Counsel, Mr. David Moskowitz, has personally supervised an investigation of these allegations. While EchoStar continues to learn more information each day, this Response sets forth the information that Mr. Moskowitz has accumulated to date. One fact that has become apparent, however, is that the way in which one attempts to determine the location of a satellite will have an impact upon where one believes that satellite is located in space.

**EchoStar's Investigation of the Facts.** In an attempt to determine the facts, EchoStar has contacted its third party Telemetry, Tracking and Control ("TT&C") vendor, Loral Skynet

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2] to 118.95° W.L. Relocating USABSS-4 alleviates some of the problems that are inherent with the continuous coordination of co-located satellites. Thus, the FCC should promptly authorize EchoStar to relocate USABSS-4 at least as far west as 118.95° W.L. and preferably to 119.1° W.L." See Letter from Todd M. Stansbury, counsel for Tempo, to Thomas S. Tycz, Chief, Satellite and Radiocommunication Division, at 2, FCC File Nos. 155-SAT-STA-96 & 156-SAT-STA-96 (April 10, 1997).

(formerly AT&T Skynet),<sup>4</sup> to determine whether Tempo's allegations have any merit. EchoStar has also separately obtained U.S. Command Data regarding the location of the satellites. As set forth in the attached affidavit of Mr. Moskowitz, the data supplied from these two sources as follows:

- That on March 20, 1998 at 18:55:00 GMT, EchoStar 1 was located at 118.91372002° W.L. based upon actual ranging of the satellite, but that according to the U.S. Space Command, this satellite was located at 118.794621015° W.L.
- That on April 2, 1998 at 10:33:00 GMT, EchoStar 2 was located at 119.007791237° W.L. based upon actual ranging of the satellite, but that according to the U.S. Space Command, this satellite was located at 119.099153408° W.L.

See Moskowitz Affidavit at ¶ 3. Skynet has further informed EchoStar that its ranging data should be more accurate than the information generated from the U.S. Space Command.<sup>5</sup> EchoStar has requested that Skynet take additional ranging data and derive

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<sup>4</sup> Hereinafter referred to as "Skynet."

<sup>5</sup> These U.S. Space Command numbers come from observations made by ground-based radars and generally are not as accurate as actual ranging information. See Moskowitz Affidavit at ¶ 3.

more exact orbital positions of its satellites. EchoStar will supply this information to the Commission as soon as it becomes available.

It appears from this information that EchoStar's two satellites at 119° W.L. are not currently being maintained in their correct orbital locations.<sup>6</sup> Upon receiving these data, Mr. Moskowitz conducted a teleconference on April 13, 1998, with Mr. Marty Speckhardt, Manager of Spacecraft Operations at the Skynet facility in Hawley, Pennsylvania. Also on this teleconference were Mr. Brent Gale, EchoStar's Vice President for Satellite and Broadcast Operations and Mr. Karl Jessinghaus, Senior Satcom Engineer who works for Mr. Gale and is responsible for managing the engineering aspects of operations at the Cheyenne station. During the course of this conversation, Mr. Speckhardt informed EchoStar as follows:

- That when EchoStar 1 was launched into orbit in December 1995, it was temporarily positioned by

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<sup>6</sup> EchoStar 1 is authorized to operate on odd-numbered channels 1-21 at 119.2° W.L. and EchoStar 2 is authorized to operate on even numbered channels 2-20 at 118.8° W.L. See EchoStar Satellite Corporation, 11 F.C.C. Rcd. 3015 (1996); 11 F.C.C. Rcd. 3016 (1996); 7 F.C.C. Rcd. 1765 (1992); Directsat Corp., 11 F.C.C. Rcd. 10575 (1996); 8 F.C.C. Rcd. 7962 (1993). Both of these satellites are supposed to be maintained within a satellite box of plus or minus 0.05 degrees in the east and west direction.

Skynet at 119.0° W.L. This positioning was in accordance with an STA granted by the Commission to test this satellite;<sup>7</sup>

- That when EchoStar 2 was launched in September 1996, Skynet let EchoStar 1 drift east to 118.95° W.L. and placed EchoStar 2 into the 119.05 orbital location.<sup>8</sup>
- That this positioning was done in order for both satellites to be within the beamwidth of the two C-band antennas being used to track the satellites at Hawley and Three Peaks, which allows only 0.2 degree spacing. Any spacing of the satellites wider than

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<sup>7</sup> See EchoStar Satellite Corporation, 11 F.C.C. Rcd. 5353 (rel. Mar. 4, 1996) (granting EchoStar an STA to operate EchoStar 1 at 119.0° W.L. instead of 119.2° W.L. for 180 days or until the launch of EchoStar 2, which occurred in September 1996).

<sup>8</sup> Tempo asserts that Mr. Speckhardt had a conversation with one of its payload system engineers on March 18, 1997, in which he stated that EchoStar 1 was located at 119.05° W.L. and EchoStar 2 was located at 118.95° W.L., and that each satellite is contained within a +/- 0.05 degree box. See Tempo Supplement at Attachment 1. Mr. Speckhardt states that the satellites had been switched from the outset and he did not give directions to change, nor did he change, the location of the satellites subsequent to March 1997. He also states that, while he has no recollection of that conversation, it is possible that he might have had such a conversation where he mistakenly gave the reverse locations for the two satellites.

is allowed by this beamwidth would mean that EchoStar would have inadequate TT&C redundancy;<sup>9</sup>

- That for safety and operational reasons it was necessary to place the EchoStar 1 and EchoStar 2 satellites close enough together to allow for each C-band antenna to view both satellites at one time;
- That no one at EchoStar ever instructed Skynet to move these satellites to those locations;
- That the two EchoStar satellites have remained centered in those locations plus or minus 0.05 degrees (east/west) to the present day.

**Remedial Actions.** It is now apparent that EchoStar had not fully instructed Skynet as to how to position its satellites once EchoStar 2 was launched and its STA had expired. EchoStar was on notice of the possibility that, in light of this failure to instruct Skynet, the satellites may have been operating outside their authorized parameters, but failed to take timely corrective measures. EchoStar accepts responsibility for this failure and is putting in place new internal procedures to assure that there is no recurrence. See below. On the other hand, until the recent teleconference with

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<sup>9</sup> Such an operational situation would be extremely imprudent  
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Mr. Speckhardt, apparently no one at EchoStar had been aware that Skynet had switched its satellites. Again, that action appears to have been taken without anyone at EchoStar instructing Skynet to do so.

EchoStar has already undertaken to correct these satellite-positioning anomalies and has put into place new procedures to ensure that they do not happen again. As previously indicated, EchoStar has requested that its TT&C vendor promptly report, to the best available degree of accuracy, the current positions of its satellites at the 119° W.L. slot. This information should be forthcoming in a matter of days.

EchoStar has also requested that Skynet immediately develop an orderly and fuel-efficient plan for the prompt relocation of EchoStar 1 and EchoStar 2 to their licensed positions. Because of prudence considerations, however, the movement of these satellites to a 0.4 degree separation may have to await the operational readiness of two C-band antennas at Cheyenne. These antennas have been mostly constructed and are expected to be operational in July 1998, in conjunction with the relocation of EchoStar 1 to 148° W.L. and the placement of EchoStar 4 at 119.2° W.L. Until that time, Skynet must control

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and risky for the satellites.



both satellites from the same two antennas at Hawley and Three Peaks, each of which only has a beamwidth corresponding to 0.2 degrees spacing and can therefore safely accommodate a separation between the two EchoStar satellites of at most 0.2 degrees.<sup>10</sup> In the mean time, especially since Tempo apparently has not taken delivery of its satellite at 118.8° W.L. from Loral and therefore Loral (EchoStar's TT&C vendor) apparently still controls that satellite, the parties can avoid any risk of collision and/or interference with TT&C operations.

EchoStar has also instituted new procedures to ensure that its satellites remain within their authorized orbital locations and are in full compliance with all applicable FCC requirements. A compliance officer has been specifically designated at EchoStar's uplink facilities in Cheyenne, Wyoming to monitor the locations of all of EchoStar's satellites and to review all of the instructions provided to its TT&C vendor for the repositioning of the satellites. This officer will have on file copies of all of EchoStar's FCC authorizations. He must

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<sup>10</sup> If the Commission were to grant EchoStar's pending requests to modify its authorizations at 119° W.L., including the relocation of EchoStar 1 to 148° W.L. and the launch of EchoStar 4 to 119.2° W.L., EchoStar would ask that the Commission allow it to develop an orderly plan for the movement of EchoStar 1 from its current position directly to 148° W.L. once EchoStar 4 is moved into the 119.2° W.L. location. In any event, EchoStar

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approve any and all instructions to Skynet regarding satellite position changes and must also obtain the concurrence of the company's Senior Vice President and General Counsel before any such instructions are sent. Skynet will be notified that it must obtain written authorization with the signatures of these two individuals before it acts on any such request to move EchoStar's satellites (other than in situations of emergency).

In addition, Skynet is to report monthly to EchoStar's compliance officer on the location of all EchoStar satellites using the best available ranging data. In this way, EchoStar and the Commission can be assured that its satellites will stay within their licensed orbital parameters.

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would reposition EchoStar 2 to 118.8° W.L. as soon as the second Hawley C-band antenna becomes operational.

EchoStar again wishes to emphasize that it takes its obligations as a Commission licensee seriously and regrets that in this one instance it apparently did not have sufficient procedures in place to ensure such compliance. EchoStar firmly believes that with these new procedures in place, its satellites will be maintained in the future in their authorized positions.

Respectfully submitted,

By: 

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Senior Vice President and  
General Counsel  
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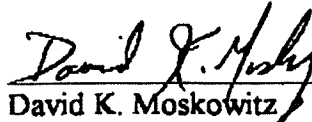
Counsel to EchoStar  
Satellite Corp., Directsat  
Corp., and EchoStar DBS Corp.

Dated: April 15, 1998

DECLARATION

I, David K. Moskowitz, hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

By



David K. Moskowitz  
Senior Vice President and General Counsel  
**ECHOSTAR SATELLITE CORPORATION**  
**DIRECTSAT CORPORATION**  
**ECHOSTAR DBS CORPORATION**  
5701 S. Santa Fe  
Littleton, CO 80120

Date: April 15, 1998

CERTIFICATE OF SERVICE

I hereby certify that on this 15<sup>th</sup> day of April, 1998, I caused the foregoing pleading to be served by hand delivery to the following persons:

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A handwritten signature in cursive script, appearing to read "Michael Nilsson". The signature is written in dark ink and is positioned above a horizontal line.

---

Michael Nilsson

## DECLARATION OF DAVID K. MOSKOWITZ

I, David K. Moskowitz, declare under penalty of perjury this 15<sup>th</sup> day of April 1998, as follows:

1. My name is David K. Moskowitz, and I am the Senior Vice President and General Counsel for EchoStar Communications Corporation as well as all of its wholly owned subsidiaries. I have held the title of General Counsel for EchoStar since 1990. As the chief legal officer of the Company, I am responsible for all matters relating to overall compliance by EchoStar with the regulations of the Federal Communications Commission, including that the operations of all space and earth stations are in accordance with the Commission's authorizations.

2. I have read the Supplemental Filing of Tempo Satellite, Inc. in FCC File Nos. DBS-88-01/68-SAT-ML-96, et. al., filed on March 27, 1998. I have also supervised the investigation of the facts regarding the location of EchoStar's satellites as well as the preparation of our Response which accompanies this Declaration. To the best of my information, knowledge and belief, the facts contained in EchoStar's Response are true and correct. I want to assure the Commission that EchoStar takes the allegations contained in Tempo's filing very seriously and has proceeded expeditiously to investigate the

facts relating to the location of its satellites at the 119° W.L. slot.

3. At my direction, Mr. Scott Shane, EchoStar's earth station manager in Cheyenne, contacted EchoStar's third party Telemetry, Tracking and Control ("TT&C") vendor, Loral Skynet (formerly AT&T Skynet), to determine where its two satellites at 119° W.L. were located. Skynet reported back to EchoStar that based upon actual ranging of the satellites, as of March 20, 1998 at 18:55:00 GMT, EchoStar 1 was located at 118.91372002° W.L. and that as of April 2, 1998 at 10:33:00 GMT, EchoStar 2 was located at 119.007791237° W.L. Separately, EchoStar also received U.S. Command data regarding the location of the two satellites. According to these data, EchoStar 1 was located at 118.794621015° W.L. and EchoStar 2 was located at 119.099153408° W.L. Skynet believes that its ranging data should be more accurate than the information generated from the U.S. Space Command because latter data come from observations made by ground-based radars.

4. In light of the discrepancies between the two sets of data, EchoStar has requested that Skynet take additional ranging data and derive more exact orbital positions of its satellites. I expect to receive this information soon.



5. Upon receiving these data, I conducted a teleconference on April 13, 1998, with Mr. Marty Speckhardt, Manager of Spacecraft Operations at the Skynet facility in Hawley, Pennsylvania. Also on this teleconference were Mr. Brent Gale, EchoStar's Vice President for Satellite and Broadcast Operations, and Mr. Karl Jessinghaus, Senior Satcom Engineer who works for Mr. Gale and is responsible for managing the engineering aspects of operations.

6. During the course of this teleconference, Mr. Speckhardt informed us that Skynet has been maintaining EchoStar 1 and EchoStar 2 within a +/- 0.05 degree box centered on 118.95° W.L. and 119.05° W.L. ever since EchoStar 2 was launched in September 1996. Specifically, Mr. Speckhardt indicated that EchoStar 1 was initially positioned by Skynet at 119.0° W.L., and that when EchoStar 2 was launched in September 1996, EchoStar 1 was allowed to drift east to 118.95° W.L. while EchoStar 2 was placed into the 119.05° orbital location.

7. While Mr. Speckhardt did not have a recollection of a telephone conversation with one of Tempo's payload system engineers on or about March 18, 1997, when I asked him about Tempo's assertions regarding such a conversation, he indicated that he could have had such a conversation where he had mistakenly given reverse positions for the two satellites, and

that in all probability EchoStar 1 was east of EchoStar 2 at that time. Mr. Speckhardt stated that the satellites had been switched from the outset and he did not give directions to change, nor did he change, the location of the satellites subsequent to March 1997.

8. Mr. Speckhardt further stated that the positioning of EchoStar's two satellites was done in order for both spacecraft to be within the 0.2 degree beamwidth of the two C-band antennas being used to track the satellites at Hawley and Three Peaks. He indicated that it was necessary to place the EchoStar 1 and EchoStar 2 satellites sufficiently close together to allow for each C-band antenna to view both satellites at one time. According to Mr. Speckhardt, this was normal operating procedure for two co-located satellites in order to have sufficiency redundancy on the ground in case one antenna went out of service or was otherwise subject to an outage.

9. Mr. Speckhardt emphatically stated that no one at EchoStar ever instructed Skynet to switch the location of EchoStar's satellites or move them closer together. I was also unable to uncover any indication that anyone at EchoStar ever made such a request of Skynet.

10. In light of these events, EchoStar has requested that Skynet immediately develop an orderly and fuel-efficient plan for the prompt relocation of EchoStar 1 and EchoStar 2 to their

licensed positions. Mr. Speckhardt has already informed me, however, that the movement of these satellites to a 0.4 degree orbital separation may have to await the operational readiness of two C-band antennas at Cheyenne. These antennas have been mostly constructed and are expected to be in operation by July 1998, in connection with the relocation of EchoStar 1 to 148° W.L. and the placement of EchoStar 4 at 119.2° W.L. Due to the narrow beamwidth of the two TT&C antennas which currently track EchoStar's 119° W.L. satellites, the maximum distance between the two satellites should not exceed 0.2 degrees in order for Skynet to control both satellites from the same antennas at Hawley and Three Peaks. If these satellites were any further apart, they could not be safely controlled with the necessary redundancy by the available antennas.

11. EchoStar has also instituted new procedures to ensure that in the future its satellites remain within their authorized orbital locations and are in full compliance with all applicable FCC requirements. A compliance officer -- Mr. Shane Scott -- has been specifically designated at EchoStar's uplink facilities in Cheyenne, Wyoming to monitor the locations of all of EchoStar's satellites and to review all of the instructions provided to its TT&C vendor for the repositioning of the satellites. Mr. Scott will have on file copies of all of

EchoStar's authorizations. He must approve any and all instructions to Skynet regarding satellite position changes and must also obtain my concurrence before any such instructions are sent. Skynet will be notified that it must obtain written authorization with the signatures of these two individuals before it acts on any such request to move EchoStar's satellites (except for emergency situations).

12. In addition, Skynet is to report monthly to EchoStar's compliance officer on the location of all EchoStar satellites using the best available ranging data. In this way, EchoStar and the Commission can be assured that its satellites will stay within their licensed orbital parameters.

I, David K. Moskowitz, hereby declare under penalty of perjury that the foregoing declaration is true and correct to the best of my knowledge.

By David K. Moskowitz  
David K. Moskowitz  
Senior Vice President and General Counsel  
**ECHOSTAR SATELLITE CORPORATION**  
**DIRECTSAT CORPORATION**  
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Date: April 15, 1998