

FEDERAL COMMUNICATIONS COMMISSION
FEE PROCESSING FORM

FOR
FCC
USE
ONLY

FCC/MELLON JAN 0 8 1993

Please read instructions on back of this form before completing it. Section I MUST be completed. If you are applying for concurrent actions which require you to list more than one Fee Type Code, you must also complete Section II. This form must accompany all payments. Only one Fee Processing Form may be submitted per application or filing. Please type or print legibly. All required blocks must be completed or application/filing will be returned without action.

SECTION I

APPLICANT NAME (Last, first, middle initial)

Hughes Communications Galaxy

MAILING ADDRESS (Line 1) (Maximum 35 characters - refer to Instruction (2) on reverse of form)

c/o Aileen A. Pisciotta, Latham & Watkins

MAILING ADDRESS (Line 2) (if required) (Maximum 35 characters)

1001 Pennsylvania Avenue, N.W., Suite 1300

CITY

Washington

STATE OR COUNTRY (if foreign address)

D.C.

ZIP CODE

20004

CALL SIGN OR OTHER FCC IDENTIFIER (if applicable)

SBS-4

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in FCC Fee Filing Guides. Enter in Column (B) the Fee Multiple, if applicable. Enter in Column (C) the result obtained from multiplying the value of the Fee Type Code in Column (A) by the number entered in Column (B), if any.

(A)	(B)	(C)	FOR FCC USE ONLY
FEE TYPE CODE	FEE MULTIPLE (if required)	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	
(1) B F Y	0 0 0 1	\$ 5,000.00	

SECTION II — To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

(A)	(B)	(C)	FOR FCC USE ONLY
FEE TYPE CODE	FEE MULTIPLE (if required)	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	
(2) [] [] []	[] [] [] []	.\$ [] [] [] []	
(3) [] [] []	[] [] [] []	\$ [] [] [] []	
(4) [] [] []	[] [] [] []	\$ [] [] [] []	
(5) [] [] []	[] [] [] []	\$ [] [] [] []	
ADD ALL AMOUNTS SHOWN IN COLUMN C, LINES (1) THROUGH (5), AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.			
TOTAL AMOUNT REMITTED WITH THIS APPLICATION OR FILING			FOR FCC USE ONLY
\$ 5,000.00			

INSTRUCTIONS FOR COMPLETING FEE PROCESSING FORM, FCC FORM 155, May 1990

- (1) "Applicant Name" - Enter the name (last, first, middle initial) of the applicant as it appears on the original application or filing being submitted with this Fee Processing Form. If company, enter name which is used commercially.
- (2) "Mailing Address (Line 1)" - Enter the street address or post office box number to which the applicant wishes correspondence sent.
- (3) "Mailing Address (Line 2)" - This line may be used for further identification of the address if additional space is required.
- (4) "City" - Enter the name of the city associated with the given street address.
- (5) "State or Country" - Enter the appropriate two-digit state abbreviation as prescribed by the U.S. Postal Service. If address is foreign, enter the appropriate country name here.
- (6) "ZIP Code" - Enter the appropriate five or nine-digit ZIP code prescribed by the U.S. Postal Service.
- (7) "Call Sign or Other FCC Identifier" - Enter an applicable call sign or unique FCC identifier, if any, as shown on your attached application or filing. If applying for a service affecting more than one call sign, enter one call sign only.
- (8) Column (A), "Fee Type Code" - Enter correct Fee Type Code(s) from the appropriate Fee Filing Guide. Only one Fee Processing Form may be submitted per application or filing. Inaccurate or erroneous Fee Type Codes may result in your application or filing being returned to you without further processing.
- (9) Column (B), "Fee Multiple" - Certain applications and filings may request action with respect to more than one station, license, frequency, or party and can be submitted together with one check if they meet specific conditions. This column is used only if a multiple, i.e., two or more, is being applied for. Examples of when this would be used are renewing more than one call sign, frequency, station, or the transfer of control of more than one station. Refer to the appropriate Fee Filing Guide for additional information.
- (10) Column (C), "Fee Due For Fee Type Code in Column (A)" - Enter in this block the amount of the fee associated with the Fee Type Code shown in Column (A) (times (x) the fee multiple, if required).
- (11) "Total Amount Remitted With This Application or Filing" - Enter the total of lines (1) through (5) of Column (C). This amount should equal the amount of your check or money order. We will not accept multiple checks.

HOW TO SUBMIT APPLICATIONS AND FILINGS

- o Each application or filing should be assembled with the Fee Processing Form stapled to the top of the application with the check placed on top of the Fee Processing Form. **DO NOT STAPLE THE CHECK TO THE APPLICATION OR FEE PROCESSING FORM.** Required copies of applications should be clearly identified as "duplicate copy" and placed behind the original package. A copy of an application or filing submitted for receipt purposes only should be placed at the bottom of the submission. Extraneous material and extra copies should be avoided at all times. Failure to abide by these instructions will delay the processing of your submission.
- o Completed applications or filings should be mailed to the proper address shown in the Fee Filing Guide for the particular service for which you are applying or making a filing. Applications and filings which are properly addressed to the appropriate P.O. box number may also be hand delivered to the following address. Applications received before midnight on a normal business day will receive that day's date as the receipt date. Deliveries made after midnight on Fridays will not be "officially" receipted until the next Monday. Applications received on weekends and government holidays are dated the next regular business day.

Federal Communications Commission
c/o Mellon Bank
Three Mellon Bank Center
525 William Penn Way
27th Floor, Rm. 153-2713
Pittsburgh, Pennsylvania
(Attention: Wholesale Lockbox Shift Supervisor)

- o A single check, bank draft or money order made payable to the Federal Communications Commission and denominated in U.S. dollars and drawn upon a U.S. financial institution must be included with each application or filing requiring a fee. No postdated, altered or third-party checks will be accepted. Do not send cash.
- o Parties hand delivering applications or filings may receive dated receipt copies by presenting copies of the applications or filings to the acceptance clerk at the time of delivery. Receipts will be provided for mail-in applications or filings if an extra copy of the application or filing is provided along with a self-addressed stamped envelope. Only one piece of paper per application or filing will be stamped for receipt purposes.

REMEMBER

- o A separate completed Fee Processing Form is required with each application or filing except in certain circumstances. Please refer to the appropriate Fee Filing Guide for additional information.
- o A wrong Fee Type Code or incorrect remittance may result in your application or filing being returned without processing, or result in the dismissal of your application or filing. Please ensure that FEE TYPE CODES are correct and that your check or money order equals the amount shown in the TOTAL AMOUNT REMITTED WITH THIS APPLICATION OR FILING block before submitting your application or filing.
- o If you have any questions completing this form, please call the Fees Hotline, 202/632-FEES.

FCC NOTICE FOR INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

Part 1, Subpart G of the Commission's rules authorize the FCC to request the information on this form. The information requested is required in order to obtain a license or authorization from the Commission. The purpose of the information is to provide a means to link a fee payment to a specific invoice, application or filing. The information will be used by the Commission to maintain data concerning fees paid to the Commission, for internal financial control, audit, and reporting purposes. Information requested on this form will be available to the public. Your response is required to obtain a license or other authorization from the Commission.

Public reporting burden for this collection of information is estimated to average 10 minutes per response, including the time for reviewing instructions, searching data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Federal Communications Commission, Office of Managing Director, Washington, DC 20554, and to the Office of Management and Budget, Paperwork Reduction Project (3060-0440), Washington, DC 20503.

PAUL R. WATKINS (1899-1973)
DANA LATHAM (1898-1974)

LATHAM & WATKINS

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CHICAGO, ILLINOIS 60606
TELEPHONE (312) 876-7700
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LOS ANGELES, CALIFORNIA 90071-2007
TELEPHONE (213) 485-1234
FAX (213) 891-8763

January 8, 1993

Federal Communications Commission
Common Carrier Domestic Satellites
P.O. Box 358160
Pittsburgh, Pennsylvania 15251-5160

Attention: Donna R. Searcy, Secretary

Re: Hughes Communications Galaxy, Inc.,
Application for Modification of
License of SBS-4

COPY

Dear Ms. Searcy:

Enclosed on behalf of Hughes Communications Galaxy, Inc. ("HCG"), licensee of the SBS-4 satellite, is an Application for Modification of License of SBS-4 to permit operation in inclined orbit mode in connection with the authorized move of the satellite from the 91° W.L. to the 77° W.L. orbital location.

Also enclosed is a check in the amount of \$5,000 to cover filing fees.

Separately and contemporaneously with this Application, HCG is filing a request for Special Temporary Authority to operate SBS-4 in inclined orbit mode at the 77° W.L. orbital location, pending final Commission action on the Application.

If there are any questions concerning this Application, please contact me.

Sincerely yours,


John P. Janka

cc: Cecily C. Holiday
Chief, Satellite Radio Branch

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

In the Matter of)
)
HUGHES COMMUNICATIONS GALAXY, INC.)
)
Application for Modification)
of License For the SBS-4)
Domestic Fixed Satellite)

COPY

APPLICATION FOR MODIFICATION OF LICENSE

Hughes Communications Galaxy, Inc. ("HCG") pursuant to Title III of the Communications Act of 1934, as amended, 47 C.F.R. § 301 et seq. hereby requests that the Commission modify the license for the SBS-4 satellite^{1/} to permit HCG to cease north-south stationkeeping and to operate SBS-4 in an inclined orbit mode. HCG will continue to perform the required east-west stationkeeping of $\pm .05^\circ$.

I. Introduction

The SBS-4 satellite is presently operating at the 91° W.L. orbital location. The satellite will be replaced at that location in the near future by Galaxy VII(H), which was

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1. See Satellite Business Systems, FCC 81-464 (released October 5, 1981) (construction of SBS-4); Satellite Business Systems, 94 FCC 2d 447 (1983) (launch SBS-4); Satellite Business Systems, Public Notice Report No. DS-463 (released November 6, 1985) (pro forma assignment of SBS-4, SBS-5 and SBS-6) from Satellite Business Systems to Satellite Transponder Leasing Corporation ("STLC"); International Business Machines Corporation, et al., 5 FCC Rcd 1655 (1990) (transfer of control of STLC from IBM to Hughes); and Satellite Transponder Leasing Corporation, 7 FCC Rcd 6341 (1992) (pro forma assignment of licenses of SBS-4, SBS-5 and SBS-6 from STLC to HCG).

successfully launched in October 1992. HCG has recently been authorized to move SBS-4 to the 77° W.L. orbital location, where it will operate for the remainder of its useful life.^{2/}

HCG intends to use the SBS-4 satellite for a variety of purposes. First and foremost, SBS-4 will continue to serve as a back-up for other satellites in HCG's fleet of Ku-band satellites. Second, HCG will make SBS-4 available for new customers, which may include applications requiring use of large tracking antennas or short satellite feeds, such as satellite news gathering ("SNG") operations. Third, SBS-4 ultimately may be made available for use as a foreign domestic satellite. The latter use would require repositioning, which would consume substantial amounts of fuel.

The present request for authority to operate SBS-4 in an inclined orbit is intended to conserve fuel. This would not only prolong the life of the satellite, but would also preserve the value of the satellite for future uses which themselves may require significant fuel resources. Operation of SBS-4 in inclined orbit mode will serve the public interest consistent with existing FCC policies, and will cause no excessive harmful interference to any adjacent satellites.

II. Operation of SBS-4 in Inclined Orbit Mode will Serve the Public Interest Consistent with FCC Policy

The FCC has previously recognized the public benefit of extending the useful lifetime of satellites through fuel

2. Hughes Communications Galaxy, Inc., DA 92-1481 (released November 2 1992).

conservation made possible by inclined orbit operation, particularly older satellites, such as SBS-4, which have been efficiently operated during the majority of their time in service.^{3/} Such maximum utilization of spacecraft serves the public by lengthening service potential and making additional services available.

Such would be the case with SBS-4. At present, it is expected that the satellite's useful life will extend only to 1994. Because north-south stationkeeping consumes over 90% of total fuel requirements for station operation, inclined orbit mode would extend the useful life of SBS-4 for several years. Extended operation would permit HCG to realize maximum value out of its substantial investment by utilizing the spacecraft for back-up as well as appropriate new services such as SNG. Additionally, conservation of fuel at this time would permit HCG to retain the future option of other fuel consuming maneuvers, such as repositioning, subject to necessary approvals.

Operation in inclined orbit mode would not cause harmful interference to adjacent satellites. An interference analysis is provided as Appendix A to this application, which is fully incorporated herein by this reference. As demonstrated in Appendix A, absent stationkeeping, the inclination angle for SBS-4 will grow at the rate of approximately 0.83° per year. The separation between SBS-4 and its adjacent satellites operated in normal mode will at no time be smaller than it would be in normal

3. See, e.g., Comsat General Corporation, 4 FCC Rcd 3820 (1989); Comsat General Corporation, 5 FCC Rcd 5913 (1990); and GTE Spacenet Corporation, 5 FCC Rcd 1182 (1990).

orbit. Therefore, the adjacent satellite interference caused by SBS-4 will not exceed the level that would occur from normal operation when kept within $\pm 0.1^\circ$ of inclination, and in fact on average may be less. This analysis is supported by the fact that other satellites using various techniques to operate inclined orbit mode, including Comsat satellites COMSTAR D-2/D-4, SBS-1, SBS-2 and SBS-3 and the GTE satellite GSTAR III have not been found to cause unacceptable adjacent satellite interference.^{4/}

HCG is also willing to accept conditions similar to those placed on other licensees operating satellites in inclined orbit mode.^{5/} In particular, HCG will continue to maintain east-west stationkeeping, will periodically control station attitude, will control interference so as not to exceed levels that would be caused in normal stationkeeping mode and, in the event of interference exceeding such levels, will immediately cease operations. Also, HCG will not claim interference protection in excess of what would be received by a satellite in normal stationkeeping mode.

In the event that Commission action on this application is not possible before SBS-4 is moved to the 77° W.L. orbital location, HCG is also requesting, by application separately but contemporaneously filed herewith, Special Temporary Authority to operate SBS-4 in inclined orbit mode.

4. See note 3, above.

5. See GTE Spacenet Corporation, note 3, above.

III. Conclusion

For the reasons stated, HCG hereby respectfully request that the Commission modify the license for SBS-4 to permit operation in inclined orbit mode.

Respectfully submitted
HUGHES COMMUNICATIONS GALAXY, INC.



Jerald F. Farrell
Senior Vice President

Hughes Communications Galaxy, Inc.
1990 East Grand Avenue
El Segundo, California 90245
(310) 607-4128

Counsel:

Gary M. Epstein
Aileen A. Pisciotta
LATHAM & WATKINS
1001 Pennsylvania Ave., N.W.
Washington, D.C. 20004
(202) 637-2240

TECHNICAL APPENDIX

1). Introduction

It is demonstrated in this Technical Appendix, that the proposed inclined orbit operation of the SBS4 satellite will cause no excessive, harmful interference into its adjacent satellites.

2). Adjacent Satellite Interference

When the inclination maneuvers are not performed on SBS 4 satellite, the inclination angle will grow at the rate of approximately 0.83° per year. The Drift and Eccentricity maneuvers will continue to be performed to keep the satellite's east-west position in compliance with the FCC requirement.

Typical satellite orbital trajectories for two adjacent satellites, where one is operated in inclined mode and the other in normal mode are depicted in Figure 1. It is clearly shown that the separation between these two satellites is at no time smaller than it would be between the same two satellites both in normal orbit. As an example: after operating SBS-4 in inclined orbit for three years the inclination angle will reach approximately 2.5° . Figure 2 shows separation of SBS-4 with 2.5° inclination from its 2° neighbor. The separation varies during a typical 24 hour period, from as much as 3.2° to as little as 2.0° . the average separation for this case is 2.64° .

3). Conclusion

Since the minimum separation of SBS-4 operated in inclined orbit to its neighbor will never be less than that of a non-inclined orbit satellite, the adjacent satellite interference caused by SBS-4 will be no greater if allowed to function in this mode as opposed to when kept within $\pm 0.1^\circ$ of inclination. In fact, on an average the interference will be reduced.

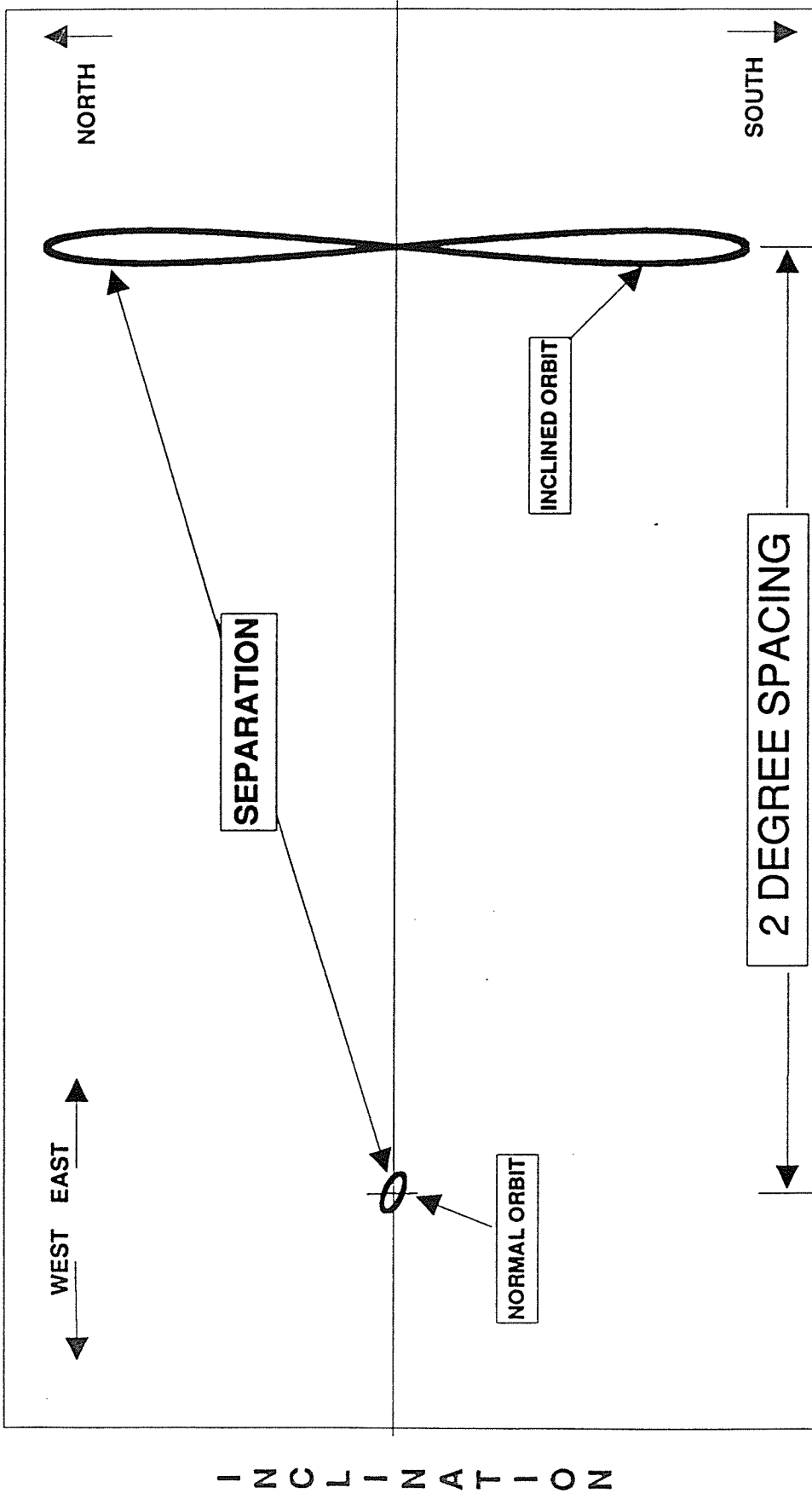


FIGURE 1. ORBIT TRAJECTORIES FOR 2 GEOSYNCHRONOUS SATELLITES

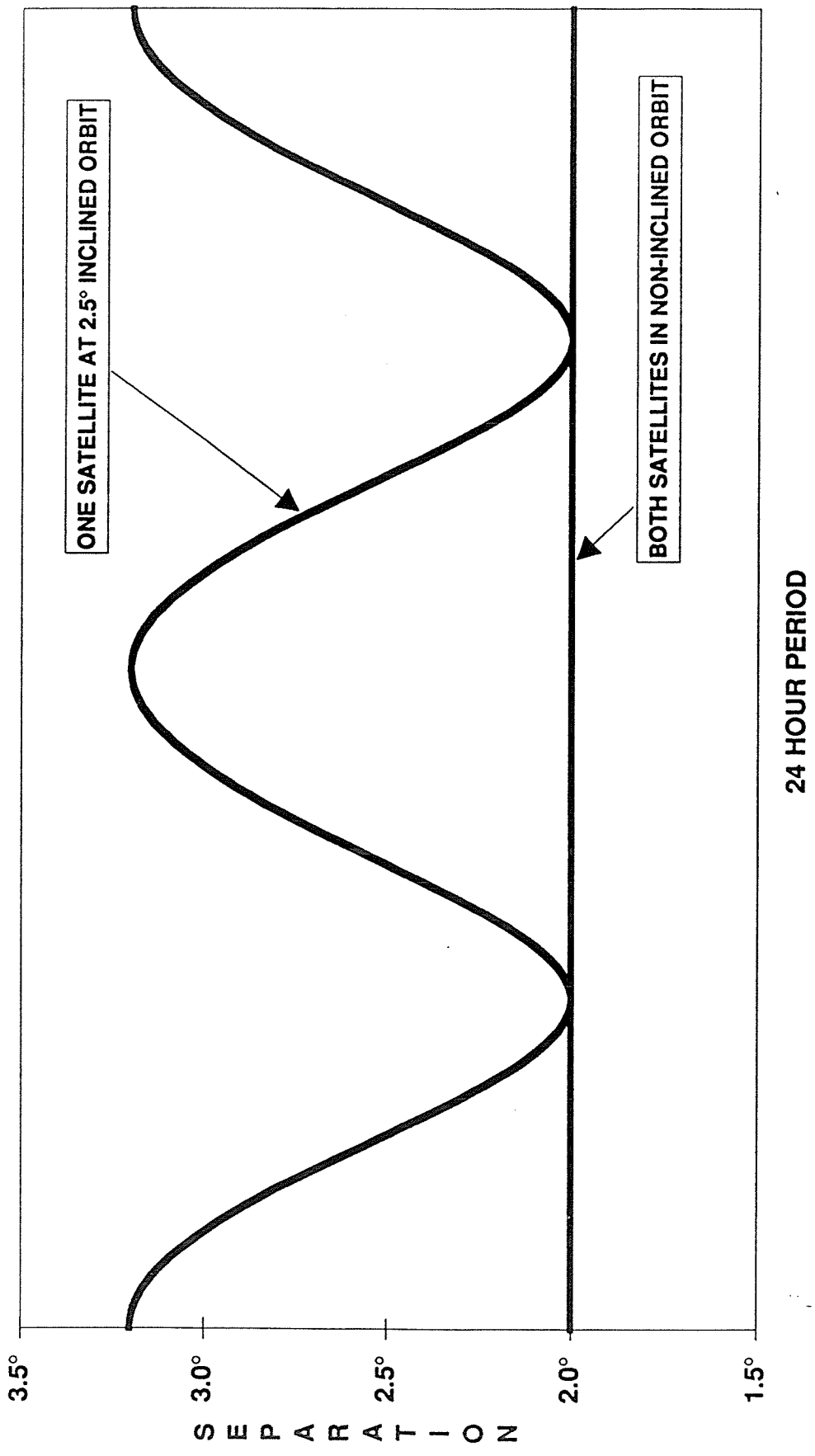


FIGURE 2. MEAN SEPARATION BETWEEN ADJACENT 2° SPACED SATELLITES

CERTIFICATION OF PERSON RESPONSIBLE
FOR PREPARING ENGINEERING AND TECHNICAL INFORMATION
SUBMITTED IN THIS APPLICATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this Application for Modification; that I am familiar with Part 25 of the Commission's Rules; that I have either prepared or reviewed the engineering information submitted in this Application and that it is complete and accurate to the best of my knowledge.

By: *Bernard Vecerek*
Bernard Vecerek
Manager, Galaxy Systems Engineering
Hughes Communications Galaxy, Inc.
1990 East Grand Avenue
El Segundo, California 90245

Dated: 12-22-92

(California form of notary)

STATE OF CALIFORNIA)
)
COUNTY OF LOS ANGELES)

On December 22, 1992 before me, Jennifer O. Groth, Notary Public in and for the State of California, personally appeared Bernard Vecerek, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity and that by his signature on the instrument the person or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.



Jennifer O. Groth
JENNIFER O GROTH, Notary Public

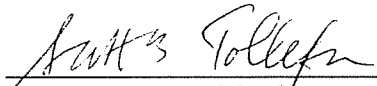
CERTIFICATION

The undersigned certifies to the Commission on behalf of Hughes Communications Galaxy, Inc. ("HCG") that neither HCG, nor its parent company, Hughes Communications, Inc. ("HCI"), nor any of the officers or directors of HCG or HCI, is subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti Drug Abuse Act of 1988, 21 U.S.C. § 853a.

Very truly yours,

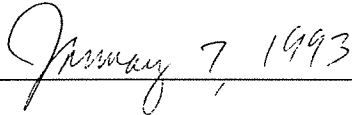
HUGHES COMMUNICATIONS GALAXY, INC.

By:



Scott B. Tollefsen
Vice President and Secretary

Dated:



January 7, 1993