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July 21, 2000

**BY HAND DELIVERY**

Ms. Magalie Roman Salas  
Office of the Secretary  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Twelfth Street Lobby, TW-A325  
Washington, D.C. 20554

RECEIVED

JUL 21 2000

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

**Re: Notification of *Ex Parte* in File No. SAT-PDR-20000420-00083**

Dear Ms. Salas:

On July 20, 2000, Andrew D'Uva and Eric Villette of New Skies Satellites N.V. ("New Skies"), and William Wiltshire and Michael Nilsson of Harris, Wiltshire & Grannis LLP met with Don Abelson, Linda Haller, John Martin, Diane Garfield, Fern Jarmulnek, Karl Kensinger, and Ronald Repasi of the International Bureau to discuss the above-captioned petition for declaratory ruling filed by Telesat Canada ("Telesat") requesting that the Commission place the planned Anik F-1 satellite at 107.3° W.L. to the Permitted Space Station List. Messrs. D'Uva and Villette also had a separate meeting with Kim Baum of the International Bureau.

At these meetings, we discussed several concerns raised in New Skies' comments in this proceeding. We also distributed a handout spelling out these concerns in some detail, a copy of which is attached hereto.

Pursuant to section 1.1206 of the Commission's rules, we are submitting two copies of this notice and the accompanying handout for inclusion in the public record.

Respectfully submitted,

William M. Wiltshire  
Michael Nilsson  
Counsel for New Skies Satellites N.V.

No. of Copies rec'd 0+2  
List A B C D E

Ms. Magalie Roman Salas

7/21/00

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cc: Don Abelson  
Linda Haller  
John Martin  
Diane Garfield  
Fern Jarmulnek  
Karl Kensinger  
Ronald Repasi  
Kim Baum

# **New Skies Satellites N.V.**

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**EX PARTE PRESENTATION OF NEW  
SKIES SATELLITES N.V. CONCERNING  
THE MATTER OF INCLUSION OF ANIK F-1  
ON THE PERMITTED SPACE STATION LIST**

**July 20, 2000**



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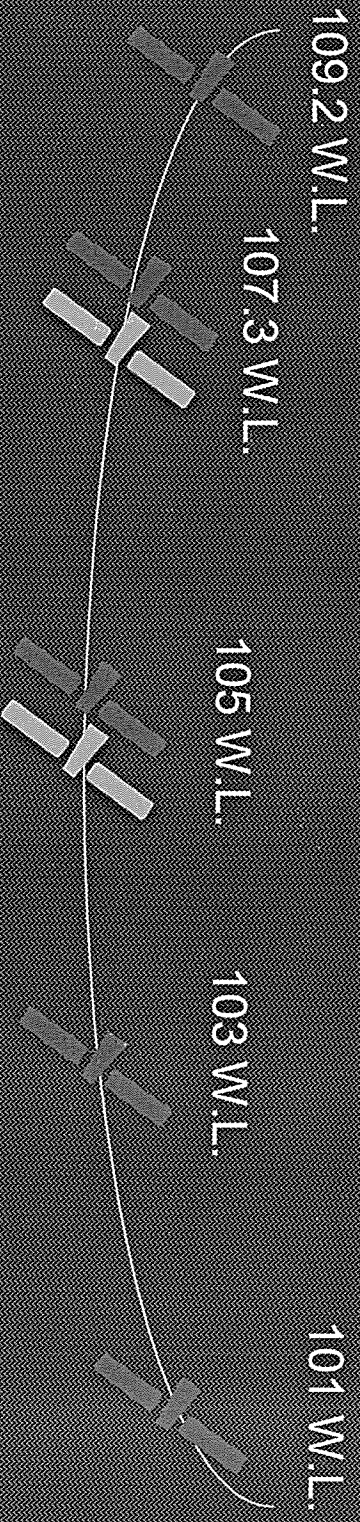


# Introduction

- New Skies Satellites has been authorized by the Netherlands to operate at 105 W.L. a satellite network that will include full-CONUS C-band coverage.  
Coordination is ongoing:
  - US: GE Americom: Substantial progress towards an operator to operator agreement concerning planned and operational networks at 103 and 101 WL.
  - Canada: Two meetings with Telesat => C-band North America is the main remaining open issue.
  - Mexico: good progress being made.
- Telesat has requested that the FCC include Anik F-1 on the Permitted Space Station List. New Skies has asked the FCC to refrain from doing so at this time.



# Current and Planned C/Ku-band Satellite Deployment in the 101 W.L. – 110 W.L. Arc



## Current

SatMex	Telesat	GE Americom	GE Americom	GE Americom
Solidaridad-1	Anik E-2	GSTAR-41	GE-1	GE-4

## Planned

SatMex	Telesat	GE Americom	GE Americom	GE Americom
Solidaridad-1	Anik F-1	GSTAR-41	GE-1	GE-4
		NSS-122		

<sup>1</sup>: Standard Ku-band only

<sup>2</sup>: C-band over North America



# Anik F-1 C-band North American beam Facts and Comparison

- Overall North America coverage.
- Peak EIRP of 46.3 dBW located in North East CONUS.
- This EIRP level is inordinately higher than that of existing C-band satellites used to serve CONUS (see table).
- Planned C-band satellites with North American or CONUS coverage also have substantially lower peak EIRP levels.

	Peak EIRP (dBW)	O.L.
GE-2	41.0	85 W
GE-3	42.0	87 W
Telstar-4	41.0	89 W
Telstar-6	40.0	93 W
Telstar-5	41.0	97 W
GE-4	41.0	101 W
GE-1	42.0	103 W
Anik E-2	39.0	107 W
Galaxy X-R	44.2	123 W
Telstar-7	42.2	129 W
Satcom C-3	41.0	131 W
Satcom C-4	41.0	135 W
Satcom C-1	38.0	137 W
GE-7	41.0	137 W
Satcom C-5	38.0	139 W
GE-8	41.0	139 W
Average	41.1	

<sup>1</sup>: Source: Telesat web site (38 dBW) and FCC application (39.7 dBW)



# Telesat has failed to demonstrate two-degree compatibility for Anik F-1's C-band operation

- What does “two degree compliance” mean?
  - Satellite networks with similar characteristics, including ground segment, can provide comparable services in a co-frequency, co-coverage area when spaced by two degrees.
- Successful coordination with Solidaridad 1 does not fulfill this condition =>
  - Solidaridad 1 does not serve all of CONUS. No C-band service from Solidaridad 1 in the U.S where Anik F-1 has its peak EIRP<sup>1</sup>.
  - No other Mexican ITU filing usable at 109.2 W.L. as of July 14, 2000.
  - Anik F-1 was required to **reduce its EIRP by 10 dB** to protect Solidaridad 1 at the US-Mexican border where the networks **are** co-frequency and co-coverage.

<sup>1</sup>. See Annex



# Consequences for C-band co-frequency, co-coverage networks two degrees away from Anik F-1

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- A two degree compliant network proposing full CONUS coverage would have to operate using much larger receiving earth stations than Telesat's to provide similar services => **Up to 275%** larger in the area of Anik F-1's peak power.
- This is commercially infeasible. Satellite users are extremely sensitive to earth station sizes. Approving Telesat's request would place a major constraint on the ability for any satellite located within 2 or even 2.3 degrees away from Anik F-1 to compete with any other satellite systems authorized to serve the U.S. market.



# Anik F-1's C-band peak EIRP is unnecessary to provide stated services

- Compliance with the FCC Part 25 rule<sup>1</sup> results in a minimum receiving antenna diameter =>  $\approx 3.0\text{m}$
- Anik F-1's high EIRP level (46.3 dBW) and such a minimum receiving earth station size results in a very large link margin => **9 dB or more** (FM-TV, Wideband digital).
- Such margins are not necessary in C-band due to propagation characteristics.
- The services proposed by Telesat in C-band are delivered by their existing satellites with substantially lower peak EIRP levels.

<sup>1</sup>: Compliance with 29.251log( $\theta$ ) at 2 degrees



# Possible Solutions to maximize orbital arc efficiency

- Increase peak EIRP of the satellite planned for 105 W.L.
  - *Not Possible*: this satellite must be compatible with GE Americom's at 103 W.L.
- Telesat could implement some operational measures to reduce the interference potential of Anik F-1's C-band North American beam into a network at 105 W.L.
- Example: Reduction of 3 dB EIRP for single carrier per transponder operations
  - No adverse consequences for U.S. users: Even with EIRP reduction Anik F-1 EIRP will be greater or equal to Anik E-2 over the U.S => Improvement of service for Telesat's U.S. customers
  - Compatibility with two-degree adjacent networks => Efficient use of the orbit/spectrum resources
  - Pro-competitive result for U.S. users => Receiving earth stations will not be unnecessarily large to overcome needless interference from 107.3 W.L.



# Conclusions

- Anik F-1 C-band peak EIRP is inordinately high compared to current and planned satellites offering full-CONUS coverage => **At least 2.1 dB higher.**
- Customers using a satellite located two degrees from Anik F-1 would have to operate much larger receiving earth stations than those using Anik F-1 for the same service => **Up to 275% larger.**
- Such high C-band peak EIRP offers no advantages => **Up to 9 dB excess link margin.**
- Solutions exist => For example, Telesat reduces ANIK F-1 EIRP by **3.0 dB** when operating in single carrier per transponder mode.



# Conclusions

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- Inclusion of Anik F-1 in the Permitted Space Station List at this stage would unnecessarily compromise C-band operation with full-CONUS coverage provided by any two-degree adjacent network.
- Successful coordination with the Netherlands at 105 W.L. would demonstrate, at least as a commercial matter, Anik F-1's C-band, co-coverage, co-frequency two-degree compatibility.



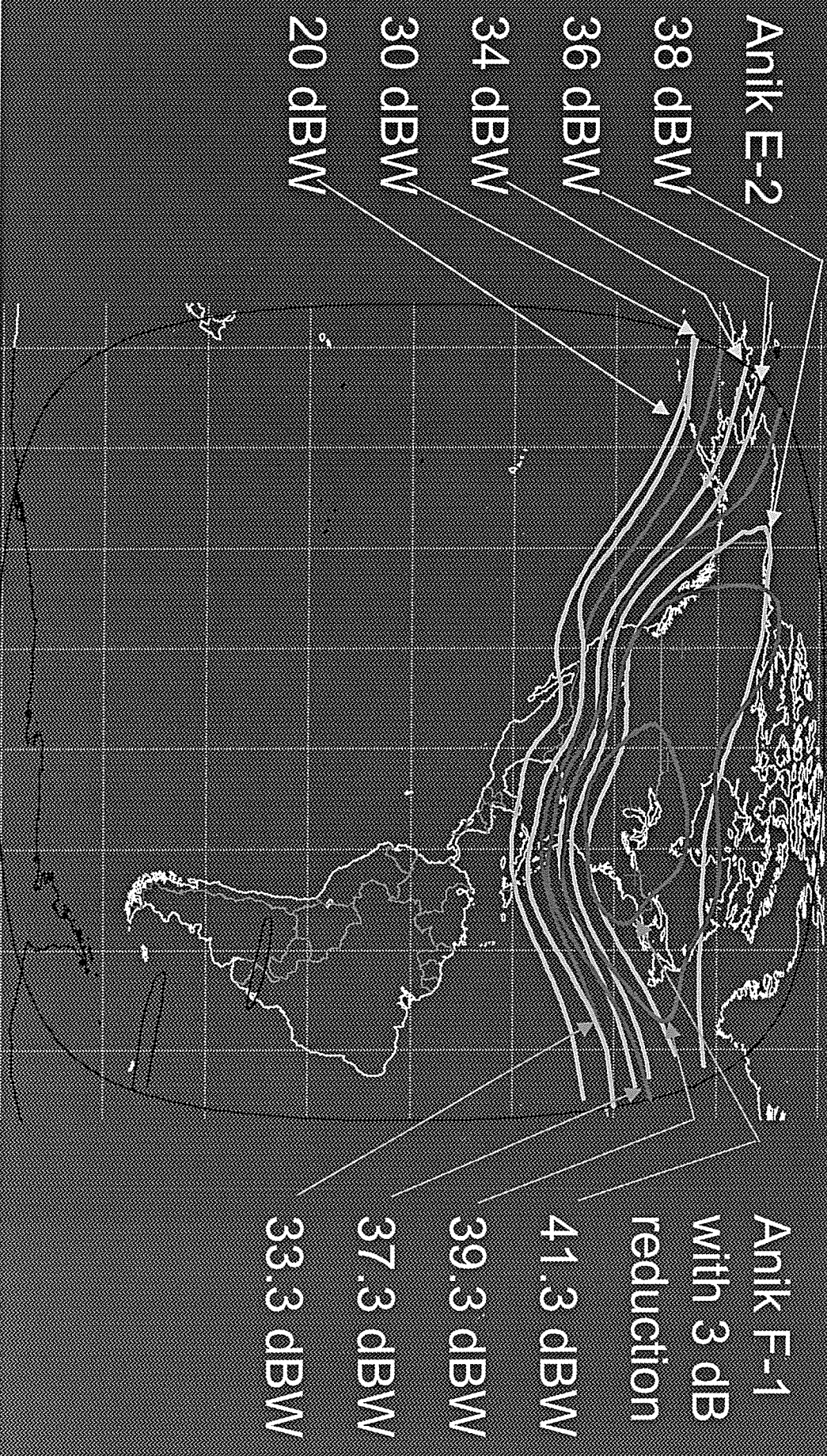
# Annex 1

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## Comparison of Anik F-1 and Solidaridad 1 C-band footprints



# Anik E-2 & Anik F-1 with 3 dB EIRP reduction C-band EIRP footprint comparison





# Annex 3

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Example of downlink Link Budget  
with Anik F-1 parameters  
as specified in Telesat application

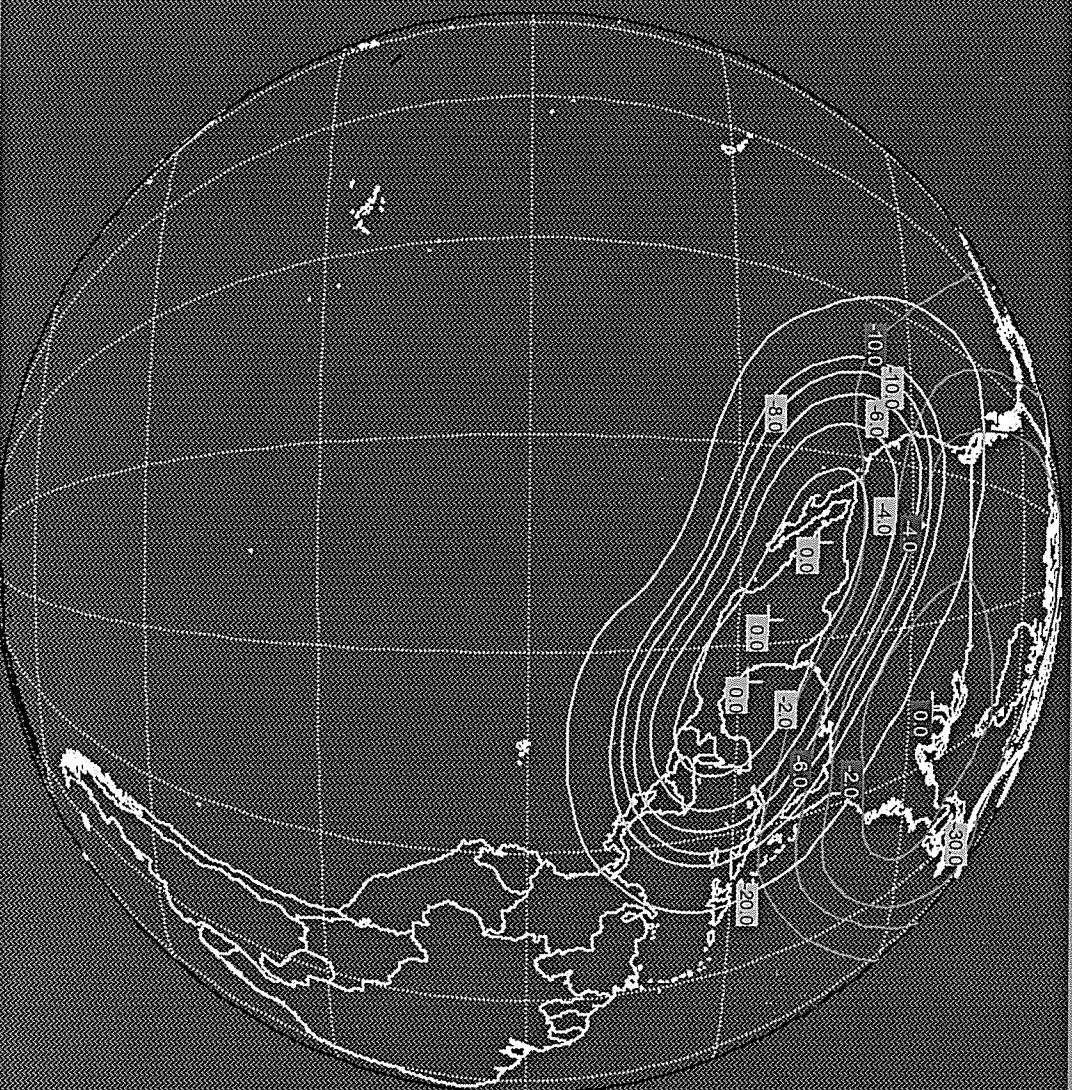


## Example of Anik F-1 downlink link budget

Peak EIRP	46.3	dBW
Free Space losses	-196.0	dB
Rx peak gain	41.8	dBi
Rx noise temperature	22.0	dBK
Noise bandwidth	75.6	dBHz
Total C/N	23.1	dB
Required C/N	13.0	dB
Link Margin	10.1	dB



# Anik F-1 and Solidaridad 1 C-band footprint comparison





## Annex 2

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Comparison of Anik E-2 and Anik F-1  
with 3 dB EIRP reduction  
C-band EIRP footprints