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January 18, 2011

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VIA IBFS

Robert G. Nelson
Chief, Satellite Division
International Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Intelsat New Dawn Company, Ltd., Application to Modify Authorization for Intelsat New Dawn, IBFS File No. SAT-MOD-20101029-00228 (Call Sign S2751)

Dear Mr. Nelson:

Intelsat New Dawn Company, Ltd. ("Intelsat"), by counsel, herein responds to the International Bureau's ("Bureau") December 17, 2010 request for additional information relating to Intelsat's above-referenced application for authority to modify the authorization for the Intelsat New Dawn satellite.

In the attached Engineering Statement, Intelsat provides an interference analysis of the effect of Intelsat New Dawn (call sign S2751) transmissions from the 32.8º E.L. orbital location on adjacent satellites. As set forth in Sections 25.114(d)(7) and 25.140(b)(2) of the Commission's rules, this analysis demonstrates the compatibility of Intelsat New Dawn two degrees from any authorized space station.[1]

[1] 47 C.F.R. §§ 25.114(d)(7) and 25.140(b)(2). *See also International Bureau Satellite Division Information: Clarification of 47 C.F.R. § 25.140(b)(2), Space Station Application Interference Analysis*, Report No. SPB-195, DA 03-3863 (Dec. 3, 2003) (Public Notice); *International Bureau Satellite Division Information: Clarification of 47 C.F.R. § 25.140(b)(2), Space Station Application Interference Analysis*, Report No. SPB-207, DA 04-1708 (June 16, 2004) (Public Notice).

Please contact Susan Crandall of Intelsat at (202) 944-7848 or me with any questions.

Respectfully Submitted,

/s/ Jennifer D. Hindin

Jennifer D. Hindin
Counsel for Intelsat New Dawn Company, Ltd.

Engineering Statement

Intelsat New Dawn Company, Ltd. ("Intelsat") hereby supplements its pending application SAT-MOD-20101029-00228 for a new satellite named New Dawn that will operate from 32.8º E.L. Specifically, Intelsat proposes to replace the text in section 10.0 of the Engineering Statement contained in its pending application with that provided herein and to include two new exhibits, 14 and 15. The inclusion of this supplementary information was requested by the Commission in a letter to Intelsat dated December 17, 2010.

The new section 10.0 and Exhibits 14 and 15 are provided below:

10.0) Adjacent Satellite Link Analysis

The impact of the proposed New Dawn emissions on the transmissions of a hypothetical adjacent satellite located at 30.8º E.L and 34.8º E.L was analyzed. It was assumed that each of these satellites had the same operating characteristics as the proposed New Dawn spacecraft. In order to minimize the number of calculations to be performed, the following combined beam peak performance characteristics were assumed for the satellites at 30.8º E.L. and 34.8º E.L:

Beam Name	Beam Polarization	Beam Peak G/T (dB/K)	Beam Peak SFD Range (dBW/m^2)	Beam Peak EIRP (dBW)
Landmass	Circular	-0.4	-111.0 to -80.0	42.2
Africa	Linear	5.3	-114.1 to -82.4	51.1

For the satellite located at 30.8º E.L., it was assumed that the adjacent satellites were New Dawn, located at 32.8º E.L, and a hypothetical satellite having the same operating characteristics as New Dawn located at 28.8º E.L. For the satellite located at 34.8º E.L., it was assumed that the adjacent satellites were New Dawn, located at 32.8º E.L, and a hypothetical satellite having the same operating characteristics as New Dawn located at 36.8º E.L.

For the C-band analysis, it was assumed that New Dawn and the hypothetical satellites located at 28.8º E.L and 36.8º E.L operated with a

maximum uplink power density of -38.7 dBW/Hz and a maximum downlink beam peak EIRP density of -35.6 dBW/Hz.

For the Ku-band analysis, it was assumed that New Dawn and the hypothetical satellites located at 28.8º E.L and 36.8º E.L operated with a maximum uplink power density of -45 dBW/Hz and with a maximum downlink beam peak EIRP density of -23.7 dBW/Hz.

For both C-band and Ku-band, downlinks EIRP densities were computed by dividing the peak EIRP by the minimum occupied bandwidth for full transponder utilization.

The analysis considered the impact of New Dawn's digital carriers on a wide band digital carrier of the adjacent satellites located at 30.8º E.L and 34.8º E.L. Wide band carriers typically determine the minimum receiving earth station size and lead to the highest downlink EIRP density for a spacecraft. The impact of New Dawn TV/FM carriers on the transmission of the adjacent satellites at 30.8º E.L. and 34.8º E.L. was not considered for the reasons articulated in section 9.0 above. The assumptions made in section 9.0 pertaining to Earth station off-axis gain performance, Earth station cross-polarization performance and rain attenuation were also applied in the analysis.

The results of the analysis are listed in Exhibits 14 and 15 and show that the proposed operation of New Dawn would not have a significant impact on the operation of a satellite located at either 30.8º E.L or 34.8º E.L. Accordingly, New Dawn transmissions will be limited to those levels contained in sections 25.212 (c) and (d) of the rules, as applicable, unless higher levels are coordinated with affected adjacent satellite operators. In any case, pursuant to the results of Exhibits 14 and 15, at C-band, the uplink power density level of New Dawn's digital carriers will not exceed -38.7 dBW/Hz and the downlink EIRP density of such carriers will not exceed -35.6 dBW/Hz. Similarly at Ku-band, the uplink power density level of New Dawn's digital carriers will not exceed -45 dBW/Hz and the downlink EIRP density of such carriers will not exceed -23.7 dBW/Hz.

Exhibit 14: Link Budget For Adjacent Satellite Located At 30.8º E.L.

UPLINK BEAM INFORMATION		
Uplink Beam Name	LANDMASS	AFRICA
Uplink Frequency (GHz)	6.175	14.125
Uplink Beam Polarization	CIRCULAR	LINEAR
Uplink Relative Contour Level (dB)	-8.0	-10.0
Uplink Contour G/T (dB/K)	-8.4	-4.7
Uplink SFD (dBW/m2)	-84	-82.4
Rain Rate (mm/hr)	42.0	42.0
DOWNLINK BEAM INFORMATION		
Downlink Beam Name	LANDMASS	AFRICA
Downlink Frequency (GHz)	3.950	11.075
Downlink Beam Polarization	CIRCULAR	LINEAR
Downlink Relative Contour Level (dB)	-5.0	-8.0
Downlink Contour EIRP (dBW)	37.2	43.1
Rain Rate (mm/hr)	42.0	42.0
ADJACENT SATELLITE 1	NEW_DAWN	NEW_DAWN
Satellite 1 Orbital Location	32.8E	32.8E
Uplink Power Density (dBW/Hz)	-38.7	-45.0
Uplink Polarization Advantage (dB)	0.0	0.0
Downlink EIRP Density (dBW/Hz)	-43.6	-31.7
Downlink Polarization Advantage (dB)	0.0	0.0
ADJACENT SATELLITE 2	SAT-2	SAT-2
Satellite 1 Orbital Location	28.8E	28.8E
Uplink Power Density (dBW/Hz)	-38.7	-45.0
Uplink Polarization Advantage (dB)	0.0	0.0
Downlink EIRP Density (dBW/Hz)	-43.6	-31.7
Downlink Polarization Advantage (dB)	0.0	0.0
CARRIER INFORMATION		
Carrier ID	72M0G7W	36M0G7W
Carrier Modulation	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	N/A	N/A
Information Rate(kbps)	49138	24575
Code Rate	1/2x188/204	1/2x188/204
Occupied Bandwidth(kHz)	60251	30133
Allocated Bandwidth(kHz)	72000	36000
Minimum C/N, Clear Sky (dB)	3.36	3.36
Minimum C/N, Rain (dB)	3.36	3.36
UPLINK EARTH STATION		
Earth Station Diameter (meters)	11.0	6.1
Earth Station Gain (dBi)	55.4	56.8
Earth Station Elevation Angle	20	20
DOWNLINK EARTH STATION		
Earth Station Diameter (meters)	2.4	1.2
Earth Station Gain (dBi)	38.1	40.6
Earth Station G/T (dB/K)	17.4	18.1
Earth Station Elevation Angle	20	20
LINK FADE TYPE	Clear Sky	Clear Sky
UPLINK PERFORMANCE		
Uplink Earth Station EIRP (dBW)	78.9	80.5
Uplink Path Loss, Clear Sky (dB)	-200.2	-207.4
Uplink Rain Attenuation	0.0	0.0
Satellite G/T(dB/K)	-8.4	-4.7
Boltzman Constant(dBW/K-Hz)	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-77.8	-74.8
Uplink C/N(dB)	21.1	22.2
DOWNLINK PERFORMANCE		
Downlink EIRP per Carrier (dBW)	37.2	43.1
Antenna Pointing Error (dB)	-.5	-.5
Downlink Path Loss, Clear Sky (dB)	-196.3	-205.3
Downlink Rain Attenuation	0.0	0.0
Earth Station G/T (dB/K)	17.4	18.1
Boltzman Constant(dBW / K - Hz)	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-77.8	-74.8
Downlink C / N(dB)	8.6	9.2
COMPOSITE LINK PERFORMANCE		
C/N Uplink (dB)	21.1	22.2
C/N Downlink (dB)	8.6	9.2
C/I Intermodulation (dB)	N/A	N/A
C/I Uplink Co-Channel (dB)*	27.0	27.0
C/I Downlink Co-Channel (dB)*	27.0	27.0
C/I Uplink Adjacent Satellite 1 (dB)	13.8	22.7
C/I Downlink Adjacent Satellite 1 (dB)	9.2	16.5
C/I Uplink Adjacent Satellite 2 (dB)	13.8	22.7
C/I Downlink Adjacent Satellite 2 (dB)	18.6	21.0
C/(N+I) Composite (dB)	4.3	7.7
Required System Margin (dB)	-1.0	-1.0
Net C/(N+I) Composite (dB)	3.3	6.7
Minimum Required C/N (dB)	-3.4	-3.4
Excess Link Margin (dB)	0.0	3.3
Number of Carriers	1.0	1.0
CARRIER DENSITY LEVELS		
Uplink Power Density (dBW/Hz)	-54.3	-51.1
Downlink EIRP Density At Beam Peak (dBW/Hz)	-35.6	-23.7

Exhibit 15: Link Budget For Adjacent Satellite Located At 34.8º E.L.

UPLINK BEAM INFORMATION		
Uplink Beam Name	LANDMASS	AFRICA
Uplink Frequency (GHz)	6.175	14.125
Uplink Beam Polarization	CIRCULAR	LINEAR
Uplink Relative Contour Level (dB)	-8.0	-10.0
Uplink Contour G/T (dB/K)	-8.4	-4.7
Uplink SFD (dBW/m2)	-84	-82.4
Rain Rate (mm/hr)	42.0	42.0
DOWNLINK BEAM INFORMATION		
Downlink Beam Name	LANDMASS	AFRICA
Downlink Frequency (GHz)	3.950	11.075
Downlink Beam Polarization	CIRCULAR	LINEAR
Downlink Relative Contour Level (dB)	-5.0	-8.0
Downlink Contour EIRP (dBW)	37.2	43.1
Rain Rate (mm/hr)	42.0	42.0
ADJACENT SATELLITE 1	NEW_DAWN	NEW_DAWN
Satellite 1 Orbital Location	32.8E	32.8E
Uplink Power Density (dBW/Hz)	-38.7	-45.0
Uplink Polarization Advantage (dB)	0.0	0.0
Downlink EIRP Density (dBW/Hz)	-43.6	-31.7
Downlink Polarization Advantage (dB)	0.0	0.0
ADJACENT SATELLITE 2	SAT-2	SAT-2
Satellite 1 Orbital Location	36.8E	36.8E
Uplink Power Density (dBW/Hz)	-38.7	-45.0
Uplink Polarization Advantage (dB)	0.0	0.0
Downlink EIRP Density (dBW/Hz)	-43.6	-31.7
Downlink Polarization Advantage (dB)	0.0	0.0
CARRIER INFORMATION		
Carrier ID	72M0G7W	36M0G7W
Carrier Modulation	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	N/A	N/A
Information Rate(kbps)	49138	24575
Code Rate	1/2x188/204	1/2x188/204
Occupied Bandwidth(kHz)	60251	30133
Allocated Bandwidth(kHz)	72000	36000
Minimum C/N, Clear Sky (dB)	3.36	3.36
Minimum C/N, Rain (dB)	3.36	3.36
UPLINK EARTH STATION		
Earth Station Diameter (meters)	11.0	6.1
Earth Station Gain (dBi)	55.4	56.8
Earth Station Elevation Angle	20	20
DOWNLINK EARTH STATION		
Earth Station Diameter (meters)	2.4	1.2
Earth Station Gain (dBi)	38.1	40.6
Earth Station G/T (dB/K)	17.4	18.1
Earth Station Elevation Angle	20	20
LINK FADE TYPE	Clear Sky	Clear Sky
UPLINK PERFORMANCE		
Uplink Earth Station EIRP (dBW)	78.9	80.5
Uplink Path Loss, Clear Sky (dB)	-200.2	-207.4
Uplink Rain Attenuation	0.0	0.0
Satellite G/T(dB/K)	-8.4	-4.7
Boltzman Constant(dBW/K-Hz)	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-77.8	-74.8
Uplink C/N(dB)	21.1	22.2
DOWNLINK PERFORMANCE		
Downlink EIRP per Carrier (dBW)	37.2	43.1
Antenna Pointing Error (dB)	-.5	-.5
Downlink Path Loss, Clear Sky (dB)	-196.3	-205.3
Downlink Rain Attenuation	0.0	0.0
Earth Station G/T (dB/K)	17.4	18.1
Boltzman Constant(dBW / K - Hz)	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-77.8	-74.8
Downlink C / N(dB)	8.6	9.2
COMPOSITE LINK PERFORMANCE		
C/N Uplink (dB)	21.1	22.2
C/N Downlink (dB)	8.6	9.2
C/I Intermodulation (dB)	N/A	N/A
C/I Uplink Co-Channel (dB)*	27.0	27.0
C/I Downlink Co-Channel (dB)*	27.0	27.0
C/I Uplink Adjacent Satellite 1 (dB)	13.8	22.7
C/I Downlink Adjacent Satellite 1 (dB)	9.2	16.5
C/I Uplink Adjacent Satellite 2 (dB)	13.8	22.7
C/I Downlink Adjacent Satellite 2 (dB)	18.6	21.0
C/(N+I) Composite (dB)	4.3	7.7
Required System Margin (dB)	-1.0	-1.0
Net C/(N+I) Composite (dB)	3.3	6.7
Minimum Required C/N (dB)	-3.4	-3.4
Excess Link Margin (dB)	0.0	3.3
Number of Carriers	1.0	1.0
CARRIER DENSITY LEVELS		
Uplink Power Density (dBW/Hz)	-54.3	-51.1
Downlink EIRP Density At Beam Peak (dBW/Hz)	-35.6	-23.7

Certification Statement

I hereby certify that I am a technically qualified person and am familiar with Part 25 of the Commission's rules and regulations. The contents of this engineering statement were prepared by me or under my direct supervision and to the best of my knowledge are complete and accurate.

/s/ Jose Albuquerque	January 18, 2011
Jose Albuquerque Intelsat Senior Director, Spectrum Engineering	Date