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A T T O R N E Y S A T L A W

W A S H I N G T O N , D . C .

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December 30, 1999

**VIA ECFS**

Magalie Roman Salas, Esq.  
Secretary  
Federal Communications Commission  
The Portals  
445 12th Street, S.W.  
Washington, DC 20554

**WRITTEN EX PARTE PRESENTATION**

Re: Views of ASTROLINK International LLC; IB Docket No. 98-172

Dear Ms. Salas:

ASTROLINK International LLC (“Astrolink”), by its attorneys, hereby provides its views on potential modifications to the Commission’s proposed 18 GHz band plan. Astrolink is the licensee of the Astrolink™ System, a first-round Ka-band GSO FSS system that will provide advanced broadband communications services to businesses and consumers in the United States and around the world. Accordingly, Astrolink has a direct and substantial interest in the 18 GHz spectrum designations under consideration by the Commission.

The Commission’s 18 GHz band plan includes a sole primary GSO FSS designation in the 18.3-18.55 GHz band, and a co-primary GSO FSS/FS designation in the 18.55-18.8 GHz band.<sup>1</sup> On December 16, 1999, representatives of Astrolink attended a meeting hosted by the FCC’s International and Wireless Bureaus in which the staff requested input from the Ka-band satellite community on the impact of three possible adjustments to the FCC’s pending 18 GHz band plan: (i) flipping the GSO FSS and GSO FSS/FS spectrum designations (*i.e.*, the 18.3-18.55 GHz band would be shared and the 18.55-18.8 GHz band would be GSO FSS only); (ii) in addition to 18.3-18.55 GHz band, designating the 18.55-18.58 GHz band as shared GSO FSS/FS

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<sup>1</sup> See *Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75 25.25 GHz Frequency Bands for Broadcast Satellite Service Use*, Notice of Proposed Rulemaking, IB Docket No. 98-172 (rel. Sept. 18, 1998) at ¶ 29 (“18 GHz NPRM”). The sole primary GSO FSS designation in the 18.3-18.55 GHz band was intended to permit the deployment of blanket-licensed satellite user terminals in this spectrum. *Id.*, at ¶32. The Commission proposed to grandfather existing fixed services in this band. *Id.*, at ¶40.

spectrum (a 30 MHz incursion into the sole primary GSO FSS spectrum at 18.55-18.8 GHz); and (iii) in addition to 18.3-18.55 GHz band, designating the 18.55-18.62 GHz band as shared GSO FSS/FS spectrum (a 70 MHz incursion into the sole primary GSO FSS spectrum at 18.55-18.8 GHz). Astrolink's views on these possible modifications to the 18 GHz band plan are outlined below.

As a preliminary matter, Astrolink notes that each of the potential modifications to the pending 18 GHz band plan proposed by the Commission retains a primary GSO FSS designation (either on an exclusive basis or shared with the FS) in the 18.3-18.8 GHz band. Moreover, the Commission staff present at the December 16 meeting confirmed that no relocation of the 500 MHz block of primary GSO FSS downlink spectrum at 18.3-18.8 GHz is contemplated. Astrolink strongly supports the Commission's conclusion that a primary GSO FSS designation will be included in the 18.3-18.8 GHz band.

Astrolink is currently in an advanced stage of system implementation, having obtained approximately \$1.33 billion in equity financing from major investors and begun construction of its initial satellite constellation. The Astrolink satellites under construction are designed to operate in the 18.3-18.8 GHz downlink band, as specified in the Astrolink modification application filed on December 22, 1997.<sup>2</sup> At this stage, *any* modification to the 18.3-18.8 GHz downlink spectrum would be extremely disruptive to the Astrolink program and would significantly delay system deployment.<sup>3</sup> Accordingly, Astrolink believes that it is vital for the Commission to retain the primary GSO FSS designation in the 18.3-18.8 GHz band, regardless of any other adjustments it makes to the 18 GHz band plan.

With respect to the specific 18 GHz band plan modifications under consideration by the Commission, Astrolink generally agrees that flipping the sole primary GSO FSS and shared GSO FSS/FS spectrum designations in the 18.3-18.55 GHz and 18.55-18.8 GHz bands may facilitate the deployment of blanket-licensed GSO FSS user terminals in 250 MHz of spectrum at 18 GHz as envisioned by the Commission.<sup>4</sup> However, the pfd limit currently applicable to FSS use of the 18.6-18.8 GHz band in the United States effectively precludes the deployment of blanket-licensed GSO FSS user terminals in the 18.55-18.8 GHz band (although gateway earth stations could operate consistent with the limit).<sup>5</sup> Because relaxation of this pfd limit is necessary to

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<sup>2</sup> See Astrolink Modification Application, File No. SAT-MOD-19971222-00200 (filed Dec. 22, 1997) at 14-15.

<sup>3</sup> Modification of the assigned downlink frequencies presumably also would disrupt the implementation of other first-round Ka-band systems, which have been licensed since May 1997.

<sup>4</sup> See *18 GHz NPRM* at ¶¶ 30, 32 and 44. There appear to be significantly fewer FS transmitters deployed in the 18.55-18.8 GHz band, which would facilitate ubiquitous GSO FSS operations and generally would avoid potential FS relocation issues associated with similar use of the 18.3-18.55 GHz band.

<sup>5</sup> See *id.*, at ¶ 64.

permit the deployment of ubiquitous GSO FSS user terminals in the 18.55-18.8 GHz band, Astrolink would support flipping the designations at 18.3-18.55 GHz and 18.55-18.8 GHz if the existing pfd limit applicable to FSS operations at 18.6-18.8 GHz is relaxed.

Astrolink cannot support, however, the proposed 30 MHz and 70 MHz incursions of shared FS/GSO FSS spectrum into the “flipped” sole primary GSO FSS spectrum designation at 18.55-18.8 GHz. Any such incursion would preclude the deployment of blanket-licensed satellite user terminals in the remaining spectrum (*i.e.*, either 220 MHz or 180 MHz of GSO FSS spectrum up to 18.8 GHz). For example, the Astrolink satellites will utilize 250 MHz TDM downlink channels and therefore require 250 MHz of “clean” (unshared) spectrum for ubiquitous user terminals.<sup>6</sup> Designating smaller amounts of unshared spectrum provides no real benefit; FS transmissions at 18.55-18.58 GHz or 18.55-18.62 GHz will “pollute” the entire 250 MHz wideband downlink channel with interference (even though they only partially overlap the 18.55-18.8 GHz band).<sup>7</sup> Moreover, because of this interference impact and because GSO FSS/FS sharing requires individual coordination of both types of stations, it will be impossible to implement blanket licensing in the “remaining” sole primary GSO FSS spectrum. Thus, *any FS incursion into the 250 MHz of sole primary GSO FSS spectrum would preclude blanket licensing and effectively eliminate the sole primary GSO FSS spectrum designation in the remainder of the 18.55-18.8 GHz band.*<sup>8</sup>

In this connection, the Commission proposes to grandfather existing FS services operating in the 18.55-18.58 GHz band (primarily CARS or “wireless cable” transmitters). Given the interference and coordination impacts of co-frequency FS operations described above, this proposal may limit the deployment of blanket-licensed Ka-band satellite user terminals in the 18.55-18.8 GHz band to geographic areas free from interference caused by grandfathered FS stations (*e.g.*, outside of major metropolitan areas with significant CARS deployment). Any such limitation on the deployment of GSO FSS user terminals can be avoided, however, by phasing out of grandfathered CARS operations in the 18.55-18.58 GHz band.

CARS operators currently utilize analog equipment and will be required to transition to digital equipment as the video transmissions they carry move to digital. As a result, CARS services will become far more spectrally efficient and will be able to provide far greater transmission capacity in significantly less spectrum. Accordingly, Astrolink urges the

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<sup>6</sup> The vast majority of Ka-band satellite systems that were licensed in the first processing round, and proposed in the second round, also will utilize wideband TDM downlinks (*e.g.*, 125 MHz or 250 MHz bandwidth channels).

<sup>7</sup> Because Ka-band satellite earth stations receive in the 18 GHz band and transmit at 30 GHz, they cannot cause interference into FS operations at 18 GHz but rather are the victims of interference from FS transmitters operating in shared frequency bands.

<sup>8</sup> This conclusion is supported by the Commission’s own findings in the *18 GHz NPRM*. See, *e.g.*, *18 GHz NPRM*, at ¶¶16-17, 43, 64-65.

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Commission to phase out grandfathered CARS operations in the 18.55-18.8 GHz band after a transition period of five years.<sup>9</sup> The small 30 MHz reduction in FS spectrum will be recouped many times over by the increased spectral efficiency gained through the use of digital equipment. Thus, phasing out grandfathered FS operations in the 18.55-18.58 GHz band will ensure that consumers in all areas of the United States have access to the advanced broadband communications services to be provided by Ka-band satellite networks such as Astrolink while, at the same time, preserving sufficient spectrum for the future FS operations.

In sum, Astrolink generally supports the Commission's proposal to flip the sole primary GSO FSS and co-primary GSO FSS/FS spectrum designations in the 18.3-18.55 GHz and 18.55-18.8 GHz bands, provided that the Commission works towards relaxation of the 18.6-18.8 GHz pfd limit in order to permit the deployment of blanket-licensed user terminals in the 18.55-18.8 GHz band. Astrolink cannot support, however, any incursion of co-primary FS spectrum in the 18.55-18.8 GHz band because it effectively would preclude the deployment of blanket-licensed satellite user terminals in that spectrum. In addition, Astrolink urges the Commission to phase out grandfathered FS operations in the 18.55-18.58 GHz band over a period of five years so that ubiquitous GSO FSS user terminals operating at 18.55-18.8 GHz can be fully deployed throughout the United States.

Respectfully submitted,

ASTROLINK INTERNATIONAL LLC

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<sup>9</sup> This five-year transition period recognizes that licensed Ka-band GSO FSS do not have an immediate need for this spectrum and will give FS operators sufficient time to complete their transition to digital equipment.