

**GARDERE & WYNNE, L.L.P.**  
ATTORNEYS AND COUNSELORS

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214-999-3000  
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401 S. BOSTON AVENUE  
TULSA, OKLAHOMA 74103-4056  
918-560-2900

MEXICO CITY  
SENECA NO. 425  
COL. CHAPULTEPEC POLANCO  
11560 MEXICO, D.F.  
011(525)282-0031

WRITER'S DIRECT DIAL NUMBER

(214) 999-4219

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

William F. Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

DOCKET FILE COPY ORIGINAL

Re: ET Docket No. 95-18

Dear Mr. Caton:

In the above-referenced Notice of Proposed Rule Making ("NPRM"), the Commission proposes reallocating the 2 GHz band to the mobile-satellite service ("MSS") for both geostationary and non-geostationary satellites.<sup>1</sup> Pursuant to Section 1.415 of the Commission's Rules,<sup>2</sup> Alcatel Network Systems, Inc. ("ANS"),<sup>3</sup> by its attorney, hereby replies to the comments on the NPRM.

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<sup>1</sup>NPRM at paras. 1, 9 and 11.

<sup>2</sup>47 C.F.R. Section 1.415 (1989).

<sup>3</sup>ANS is a wholly-owned subsidiary of Alcatel Alsthom ("Alcatel"), one of the world's largest corporations (with annual sales in excess of \$30 billion) and the world's largest manufacturer and supplier of telecommunications equipment. In particular, Alcatel is the world's largest independent manufacturer and supplier of microwave radios. Formerly Collins Radio and Rockwell International, ANS, with over \$750 million in annual sales, is a world leader in manufacturing microwave and light wave transmission systems. ANS' equipment is used for a wide range of services, including short, medium and long-haul voice, video and data transmission. Its microwave customers include all the Bell Operating Companies, most major independent telephone companies, cellular operators, power and other utility companies, oil companies, railroads, industrial companies, and state and local government agencies.

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To implement this proposed reallocation, the Commission: (i) would relocate Broadcast Auxiliary Service ("BAS") users elsewhere in the 2 GHz band; and (ii) would relocate terrestrial fixed point-to-point microwave service ("FS") users to the bands above 3 GHz designated for the 2 GHz FS users displaced to clear PCS spectrum.<sup>4</sup> In Reply Comments filed contemporaneously herewith, the Fixed Point-to-Point Communications Section, Network Equipment Division of the Telecommunications Industry Association ("TIA"), opposes the Commission's proposals made in the NPRM because, based upon the record:

- The Commission ignores the acute spectrum shortage facing FS users. It proposes that the FS users evicted from the 2 GHz band for MSS join the already overcrowded bands above 3 GHz. This overcrowding could become worse if the Commission's recommendations to reallocate the 6, 11 and 18 GHz bands, so that FS users would share these bands with non-geostationary ("NGSO") MSS feeder links on a co-primary basis, are adopted at WRC-95.<sup>5</sup> The FS users offer essential services on these bands (e.g., state and local governments provide emergency communications, electric utilities protect their transmission networks, and gas pipeline operators control pumping stations). These users demand very high path reliability (e.g., 99.999% or higher). If sharing with NGSO MSS feeder links is required, FS users would be handicapped severely in providing these critical services because they could lose up to 50 MHz or 30% of the upper 6 GHz and 11 GHz bands and because their path reliability could be degraded significantly.<sup>6</sup>

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<sup>4</sup>Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, Second Report and Order, ET Docket No. 92-9, 8 FCC Rcd 6495, 6519-20 (1993), modified, Memorandum Opinion and Order, 9 FCC Rcd 1943 (1994). Specifically, in the NPRM, the Commission proposes reallocating the 1990-2025 MHz (Earth-to-space) and the 2165-2200 MHz (space-to-Earth) frequency bands for MSS. Under the assumption that BAS and MSS users could not share the 1990-2025 MHz band, the Commission proposes relocating BAS users to the 2110-2145 MHz band. Consequently, FS users would be forced to move from the 2110-2145 MHz band, because the Commission assumes that they could not share that band with newly relocated BAS users, and they would be forced to move from the paired 2165-2200 MHz band, because the Commission assumes that they could not share that band with MSS users. These displaced 2 GHz FS users would move to the bands above 3 GHz designated for their relocation in ET Docket No. 92-9. NPRM at paras. 1, 9-11.

<sup>5</sup>See Preparation for International Telecommunication Union World Radiocommunication Conferences, Report, IC Docket No. 94-31 (FCC 95-256, released June 15, 1995) at paras. 46-54 ("WRC-95 Report").

<sup>6</sup>Allocation of the upper 6 GHz and 11 GHz bands to NGSO MSS feeder links on a co-primary basis would be disastrous for FS users. The upper 6 GHz band is the preferred band for low capacity FS users, but these systems have very low receiver thresholds, which are particularly susceptible to satellite interference. Moreover, the NGSO MSS feeder link earth stations will be difficult to

- Highly questionable assumptions are made by the Commission regarding how much spectrum for MSS in the 2 GHz band actually would be needed to supplement the 1.6/2.4 GHz MSS allocation and how much spectrum would have to be surrendered by FS users to accommodate MSS and BAS users.
- Significant unresolved issues exist regarding how relocated FS and BAS licensees would be compensated.
- Reallocation of the 2 GHz band for MSS would not have to be made on an urgent basis because it will be several years before international launch of this service occurs.

These critical unresolved issues compel TIA, in its Reply Comments, to recommend that the Commission defer any reallocation of the 2 GHz band for MSS. Instead, TIA urges that the Commission first work with appropriate industry groups to resolve such critical issues:

- The actual amount of spectrum in the 2 GHz band needed for MSS in the U.S. must be determined and documented. Further serious consideration must be given to the Commission's alternative proposal to allocate only 40 MHz, instead of 70 MHz, for 2 GHz MSS.<sup>7</sup>
- The availability of replacement spectrum for FS users in the 6 GHz and 11 GHz bands must be determined. These bands already are saturated with FS

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frequency coordinate. The ITU calculated a maximum coordination distance of 700 kilometers (435 miles) for downlinks in the 6 GHz band. Coordination generally will have to be done for the whole frequency band, over a much wider range of azimuth angles than a geostationary earth station. It will be important to site the earth stations in remote areas, with adequate terrain or man-made shielding. As NGSO MSS grows, it is likely that additional earth stations will be required in the future. For the foregoing reasons, interference from NGSO satellite downlinks is a potentially serious problem in the upper 6 GHz band, particularly interference into existing field equipment. The 50 MHz of spectrum affected may become unusable in the future, impacting frequency availability for up to 30% of the band. Similar problems exist in the 11 GHz band, since a wide range of azimuth angles must be considered. See May 16, 1995, Statement of Non-Concurrence by various FS interests, including TIA and ANS, to the Final Report of the Commission's Industry Advisory Committee on Preparation for WRC-95.

<sup>7</sup>As an alternative to the proposed reallocation of the 1990-2025 MHz and 2165-2200 MHz bands, the Commission seeks comment on the merits of reallocating only 40 MHz for MSS in the 1990-2010 MHz and 2180-2200 MHz bands. These bands were allocated for MSS worldwide at WARC-92 and remain available for paired use even after the PCS allocation. NPRM at para. 15.

users.<sup>8</sup> In its WRC-95 Report, the Commission attempts to protect displaced FS users by giving them priority when relocating to the 6 GHz and 11 GHz bands.<sup>9</sup> However, once these bands are reallocated so that NGSO MSS feeder links are co-primary with FS users, such priority treatment will be meaningless. The bands generally would become unavailable to FS users due to harmful interference from NGSO MSS feeder links.

- Instead of assuming that BAS users still need 35 MHz to maintain their current level of operation, the availability of alternative bands and the ability of new digital compression and other techniques to reduce the amount of spectrum they actually would need must be evaluated.
- With appropriate technical restrictions, it is possible that certain FS paths can operate on a co-primary basis in the 2165-2200 MHz band with MSS users. An industry group, such as TIA's TR14.11, which developed the FS/PCS sharing criteria in Bulletin 10-F,<sup>10</sup> could work with MSS interests: (i) to establish appropriate criteria for determining whether FS paths could share the 2165-2200 MHz band with MSS users; and (ii) to establish appropriate channel plans and other technical restrictions on MSS users to protect FS users in the same band if such sharing were to occur.

ANS supports TIA's deliberate, prudent approach. Until the foregoing questions are answered, it is premature to take any action.<sup>11</sup> Thus, ANS joins TIA in requesting that the Commission defer

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<sup>8</sup>Displaced 2 GHz FS users generally operate paths 15-20 miles long. Creating New Technology Bands for Emerging Telecommunications Technology, Office of Engineering and Technology, OET/TS 91-1 (December 1991). Unfortunately, due to propagation characteristics, FS users cannot operate paths this long in bands above 15 GHz without incurring extra expense because additional repeaters would have to be installed. Thus, these users likely will migrate to the 6 and 11 GHz bands.

<sup>9</sup>WRC-95 Report at para. 53.

<sup>10</sup>See "Telecommunications Systems Bulletin No. 10-F, Interference Criteria for Microwave Systems," which prescribes standards for implementing the new FS radio channel plans for the bands above 3 GHz and for establishing criteria regarding 2 GHz band PCS-to-FS interference protection.

<sup>11</sup>Inexplicably, however, the Commission appears determined to proceed with this reallocation despite these serious questions. In the recently adopted WRC-95 Report, the Commission continues advocating that WRC-95 adopt a worldwide primary MSS allocation in the 1990-2025 MHz and 2165-2200 MHz bands. WRC-95 Report at para. 43. It also recommends that the January 1, 1996, entry date for U.S. MSS systems be maintained. Id. at para. 45. Based upon the record of this proceeding, the foregoing Commission recommendations for WRC-95 are totally unjustified and should be withdrawn or deferred.

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any further action on reallocation of the 2 GHz band for MSS until WRC-95 is completed and until industry groups finish all necessary studies to resolve the issues raised on the record.

Alternatively, if the Commission justifies reallocating the 2 GHz band for MSS, FS users, which are forced to relocate, must be protected. ANS supports other FS users and TIA in strongly recommending that such relocation be implemented on a phased-in basis and that FS users be compensated appropriately, consistent with the requirements adopted in ET Docket No. 92-9.

Should there be any questions concerning these reply comments, please contact the undersigned counsel for ANS.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert J. Miller", with a long horizontal flourish extending to the right.

Robert J. Miller

RJM/dwt

cc: All parties of record

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