

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

In the Matter of)
)
Amendment of Part 2 of the)
Commission's Rules to Allocate)
Spectrum Below 3 GHz for Mobile) ET Docket No. 00-258
and Fixed Services to Support the)
Introduction of New Advanced)
Wireless Services, including Third)
Generation Wireless Systems)

COMMENTS ON FCC FINAL REPORT

The Wireless Communications Association International, Inc. ("WCA") hereby responds to the Commission's *Public Notice* of March 30, 2001¹ soliciting comments from the public on the Commission's March 30, 2001 *Final Report*, "Spectrum Study of the 2500-2690 MHz Band: The Potential for Accommodating Third Generation Mobile Systems" (the "*Final Report*").

At the outset, WCA wholeheartedly agrees with the broad conclusions reached in the *Final Report*, particularly that:

- the 2500-2690 MHz band (the "2.5 GHz band")² is extensively licensed to Multipoint Distribution Service ("MDS") and Instructional Television Fixed Service ("ITFS") stations, and is increasingly used by licensees for the deployment of broadband fixed wireless services that provide valuable benefits to the public (either by providing a much-needed competitive alternative to the DSL and cable modem service or by providing broadband service in areas where the incumbents have chosen not to deploy infrastructure);
- financial, technical and operational support from commercial broadband wireless service operators is essential to the continued viability of the unique educational and

¹ "FCC Releases Staff Final Report "Spectrum Study of 2500-2690 MHz Band: The Potential for Accommodating Third Generation Mobile Systems", *Public Notice*, DA 01-786 (rel. Mar. 30, 2001).

² WCA must note a minor error at page 14 of the *Final Report* in connection with the Commission's statement that "the 2686-2690 MHz band is allotted for ITFS response channels and is shared between ITFS licensees and private operations." In fact, a portion of the 2686-2690 MHz band is allocated for use by MDS licensees, including licensees who acquired the right to utilize that spectrum at auction. See 47 C.F.R. § 21.901(b)(4), (5), (6).

instructional services that are offered by the ITFS community, and any separation of MDS from ITFS would jeopardize the viability of both;³

- cochannel sharing between existing and planned MDS/ITFS facilities and contemplated 3G services is not technically feasible due to the required separation distances;⁴
- segmenting the 2.5 GHz band to make a portion of the spectrum available for 3G usage would jeopardize the roll-out of broadband wireless services;⁵ and
- there is no alternative frequency band that could accommodate a relocation of MDS/ITFS.⁶

Each of these conclusions is well-supported by the record developed in this proceeding, and should lead the Commission to promptly declare that the 2.5 GHz band cannot be made

³ *Final Report*, at 60.

⁴ *See id.* at ii.

⁵ *See id.* at ii-iii. WCA takes solace in the fact that while Section 7 of the *Final Report* analyzes certain of the costs that would be incurred by an attempt to reallocate all or part of the 2.5 GHz band, the *Final Report* recognizes that it is beyond the scope of the *Final Report* to identify and quantify all of the cost components for which reimbursement is required. *See Final Report*, at 82. Indeed, in its initial comments WCA identified a host of costs that would have to be addressed were the Commission to reallocate MDS or ITFS spectrum for 3G, and many of those items are not considered in the *Final Report*. *See Comments of WCA*, ET Docket No. 00-258, at 49-53 (filed Feb 22, 2001). Given the acknowledgement in the *Final Report* that Section 7 is not a comprehensive analysis of all of the costs that would have to be reimbursed, WCA need not address the issue further at this time.

⁶ *See Final Report*, at 59-80. While WCA agrees with the conclusion reached by the Commission, WCA is concerned that the *Final Report* does not sufficiently address the substantial operational difficulties (and the resulting economic burdens) that would be associated with any attempt to relocate MDS/ITFS operations to spectrum above 3 GHz. In its *Emerging Technologies* docket, the Commission has already concluded that “there are no frequency allocations above 3 GHz that could readily support the requirements of MDS, which are wide-area and point-to-multipoint in nature.” *Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies*, 7 FCC Rcd 6886, 6889 (1992) (emphasis added). Indeed, the Commission has recently re-affirmed that spectrum above 3 GHz is not equivalent to that in the 2 GHz band, and found that far more spectrum above 3 GHz is required to compensate for the differences in propagation characteristics between the two bands. *See, e.g., Amendment of the Commission’s Rules with Regard to the 3650-3700 MHz Government Transfer Band; The 4.9 GHz Band Transferred from Federal Government Use*, 15 FCC Rcd 20488, 20497-98 (2000). Resolution 223 of the Final Acts of WRC-2000 reaffirmed the importance of maintaining MDS/ITFS-like services below 3 GHz, recognizing that such services are in operation in the 2.5 GHz band around the globe and concluding that “for technical reasons, the existing applications in the bands identified for [3G] require spectrum below 3 GHz.” Final Acts of the World Radiocommunication Conference (WRC-2000), Resolution 223 at 2. *See also* HAI Consulting, Inc., “MDS/MMDS/ITFS Two-Way Fixed Wireless Broadband Service: Spectrum Requirements and Business Case Analysis” at 9 (filed Feb. 22, 2001 as Appendix B to Comments of WCA, ET Docket No. 00-258)(“Beyond about 3 GHz, equipment designers are

available for 3G services consistent with the public interest. Only then will the regulatory uncertainty caused by this proceeding – an uncertainty that is without doubt slowing deployment of broadband services – be eliminated.

Although it is clear that the 2.5 GHz band should be preserved for the current MDS/ITFS incumbents, WCA is concerned that the discussion in the *Final Report* regarding guardbands between 2.5 GHz MDS/ITFS and 3G services could lead to unfortunate results if applied to coordination of MDS usage at 2150-2162 MHz with 3G services in a block starting at 2110 MHz. As WCA made clear in its reply comments, a modest guardband will inevitably be required between these two bands.⁷ Specifically, WCA advised the Commission that:

Although further engineering analysis is required to identify precisely the size of the guardband required to protect MDS use of the 2.1 GHz band from interference by 3G operations, preliminary analysis suggests that by imposing an appropriate 3G spectral mask, limiting 3G power levels to those set out in the February 21, 2001 Report of the Industry Working Group on 3G Characteristics submitted as an attachment to the Mobile Industry Association Comments, and implementing a modest guardband, the Commission can provide for co-existence between 3G and 2.1 GHz MDS in nearby bands. WCA expects to submit a supplemental engineering analysis of this issue shortly.⁸

Since that filing, WCA has coordinated with manufacturers of 3G and broadband wireless equipment, as well as with system operators, in an effort to more fully address the guardband

forced to different technologies and lower integrated circuit device densities for radio frequency parts, which profoundly increases manufacturing cost and equipment prices.”).

⁷ Reply Comments of WCA, ET Docket No. 00-258, at 28 (filed Mar. 9, 2001).

⁸ *Id.* at 30-31.

issue. At this juncture, WCA is not prepared to recommend any specific guardband. However, there are two concerns WCA has with the analysis used by the Commission to determine that a guardband of 4 MHz appears to be appropriate.

First, the analysis contained in the *Final Report* does not appear to consider the potential impact of transmissions from MDS subscriber premises equipment on 3G handsets located in close proximity and attempting to receive signals transmitted by a base station on a band adjacent to the MDS band.⁹ From WCA's preliminary investigation of the guardband issue, it appears that the potential for interference of this sort may not be insubstantial and that the need to prevent interference to 3G handsets may ultimately dictate the size of the guardband.¹⁰ Clearly, the guardband between MDS at 2150-2162 MHz and a nearby 3G band cannot be established until interference to 3G handsets can better be understood.¹¹

Second, WCA must take issue with the approach used in the *Final Report* for calculating the guardband necessary to protect MDS response station hubs (which are going to be the facilities most often requiring protection in the 2150-2162 MHz band). In essence, the *Final Report* concludes that a 4 MHz guardband is appropriate by making assumptions regarding the desired signal level for MDS/ITFS transmissions received at the MDS response

⁹ When the Commission first proposed reallocating 2110-2150 MHz, WCA raised concerns regarding adjacent channel coordination and urged the Commission to make clear that those operating at 2110-2150 MHz would be required to accept interference from MDS out-of-band emissions that comport with the Commission's recently adopted MDS spectral mask. *See* Comments of WCA, ET Docket No. 95-18, at 13-14 (filed Feb. 3, 1999). No party filing in that proceeding opposed adoption of WCA's proposal.

¹⁰ Because this interference scenario involves both the 3G and the broadband consumer equipment, cost considerations effectively limit us of some technological means for reducing interference (such as the use of sophisticated, but expensive, filtering).

station hub and then determining the size of the guardband necessary to yield a 0 dB desired-to-undesired signal level.¹² While it is too early for WCA to determine whether the *Final Report*'s conclusion – that a 4 MHz guardband will protect MDS and 3G – is correct, WCA cannot agree with the use of a desired-to-undesired signal ratio to assure protection to the MDS response station hub. In its *Report and Order* in MM Docket No. 97-217, the Commission specifically rejected the use of desired-to-undesired signal ratios to protect response station hubs and instead adopted an approach whereby an adjacent channel newcomer is required to demonstrate that the proposed facility will not increase the noise floor at a reception antenna of the response station hub by more than 45 dB.¹³ WCA submits that this approach provides a more realistic level of protection to MDS response station hubs and should be utilized in calculating the appropriate guardband between MDS at 2150-2162 MHz and any nearby 3G allocation.

¹¹ While WCA's work to date is preliminary, WCA's discussions with the vendor community suggest that the *Final Report* is not correct in concluding that a "2 megahertz guard band could be sufficient to protect most 3G systems." *Final Report*, at 51.

¹² See *Final Report*, at 29.

¹³ See *Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, 15 FCC Rcd 19112, 19140 (1998).

In short, the Commission's staff is to be applauded for preparing the *Final Report*, which is an extremely useful addition to the record in this proceeding and should lead the Commission to promptly withdraw the MDS/ITFS spectrum from consideration for 3G usage.

Respectfully submitted,

THE WIRELESS COMMUNICATIONS
ASSOCIATION INTERNATIONAL, INC.

By: /s/ Andrew Kreig
Andrew Kreig
President

1140 Connecticut Avenue, NW
Suite 810
Washington, DC 20036
(202) 452-7823

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