Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands	)	WT Docket No. 03-66 RM-10586
	)	
Part 1 of the Commission's Rules - Further Competitive Bidding Procedures	)	WT Docket No. 03-67
	)	
Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service to Engage in Fixed Two-Way Transmissions	)	MM Docket No. 97-217
	)	
Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico	)	WT Docket No. 02-68 RM-9718
	)	

REPLY COMMENTS OF CELPLAN

CelPlan Technologies, Inc. ("CelPlan") hereby replies to the comments filed in response to the Commission's Notice of Proposed Rulemaking ("NPRM") in this proceeding.[1] CelPlan, which is based in Reston, VA, offers a comprehensive range of software and engineering consulting services, including system design, RF planning, system validation, RF measurement, demand/traffic analysis, networking, capital/economic modeling, quality assessment, technology development, signaling/protocol interfacing, spectrum analysis and training in connection with virtually

[1] Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands, 18 FCC 6722 (2003)["NPRM"].

all wireless technologies, including broadband and third generation applications.[2] In addition, CelPlan's software is widely used within the MDS/ITFS industry for modeling the potential for interference in accordance with Appendix D of the Report and Order in MM Docket No. 97-217.

The record developed in response to the *NPRM* demonstrates that the October 7, 2002 white paper (the "Coalition Proposal") filed by the Wireless Communications Association International, Inc., the National ITFS Association and the Catholic Television Network (collectively, the "Coalition") offers the most effective and efficient solutions for development of the 2500-2690 MHz band.[3] Reflecting the substantial efforts undertaken by the three industry representative organizations, the Coalition Proposal presents the best possible compromise among a variety of competing considerations. Most importantly, the Coalition Proposal appropriately satisfies the strong interest that licensees and system operators have in retaining their current flexibility to deploy time division duplex ("TDD") or frequency division duplex ("FDD") technology on any channel in the lower and upper segments of the band at any time, while at the same time reasonably maximizing interference protection and minimizing spectral inefficiencies.

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[2] CelPlan has previously participated in Commission proceedings involving both MDS/ITFS regulation and the allocation of spectrum for Advanced Wireless Services. *See* Comments of CelPlan Technologies, ET Docket No. 00-258 (filed Feb. 22, 2001); Comments of CelPlan Wireless Global Technologies, DA 00-1256 (filed Jun. 19, 2000).

[3] "A Proposal For Revising The MDS and ITFS Regulatory Regime," Wireless Communications Ass'n Int'l, Nat'l ITFS Ass'n and Catholic Television Network, RM-10586 (filed Oct. 7, 2002). The Coalition submitted two supplements that addressed issues left open in the original white paper and sought to clarify points that apparently had been misunderstood by some parties within the industry. *See* "First Supplement To 'A Proposal For Revising The MDS And ITFS Regulatory Regime,'" RM-10586 (filed Nov. 14, 2002); "Second Supplement To 'A Proposal For Revising The MDS And ITFS Regulatory Regime,'" RM-10586 (filed Feb. 7, 2003) ["Second Coalition Supplement"]. For simplicity's sake, references to the "Coalition Proposal" should be read to reference all three filings.

The key to the Coalition Proposal is a concept that CelPlan endorses – so long as the Commission sets appropriate limitations on out-of-band emissions ("OOBE"), licensees can provide service that is reasonably interference-free without any need for Commission-mandated fixed guardbands between systems that may transmit in opposite directions at any given moment in time (what the Coalition refers to as "non-synchronized" systems).

The Coalition Proposal properly calls for all LBS/UBS emissions to be attenuated below the transmitter power (P_{watts}) by at least 43 + 10 log (P_{watts}) dB measured at the edge of the relevant channel block unless otherwise agreed by the adjacent channel licensee. This is the same OOBE limit imposed on PCS – a service where all service providers use the 1850-1910 MHz band for upstream communications and the 1930-1990 MHz band for downstream communications -- and it is not surprising that the vendor community has endorsed the application of this mask here.

However, the Coalition properly recognizes that this PCS-like mask is inadequate to protect non-synchronized operations. While some of the commenting parties suggest that the Commission must segregate TDD from FDD and mandate fixed guardbands between the TDD and FDD sub-bands, the Coalition Proposal is more flexible and efficient. Rather than propose segregation of TDD and FDD technologies, the Coalition suggests that a more stringent operational OOBE requirements be imposed where adjacent channel licensees do not utilize synchronized technologies. Under that proposal, every licensee would be required, if requested by an eligible licensee utilizing a non-synchronized technology, to take such operational steps as are necessary to

manage the OOBE of its relevant base stations such that they are attenuated below the transmitter power (P_{watts}) by at least 67 + 10 log(P_{watts}) dB measured 3 MHz and beyond inside the frequency block of the requesting licensee and to take certain additional steps where adjacent channel base stations are located in extremely close proximity to one another.[4] While it is certainly true that licensees would be required to establish guardbands to meet this standard given the current state of affordable filter technology, as technology improves over time the size of the guardband will shrink and may entirely disappear. The more dual mask proposed by the Coalition will provide synchronized and non-synchronized systems appropriate protection without undue cost, and allows licensees in non-synchronized situations to recapture the use of any guardband spectrum as filter technology improves over time without need for further Commission action. Indeed, this approach should spur the development of improved filters, as system operators will have every incentive to insist on better filters so that they can recapture any spectrum that would otherwise have to be devoted to guardband.

Moreover, the approach advocated by the Coalition avoids a substantial risk associated with the segregation of specific bands for TDD and for FDD – such segregation inevitably will leave individual licensees unable to deploy the technology of their own choosing and may result in spectrum laying fallow if the demand for a particular technology is insufficient to justify use of all of the spectrum allocated for that technology. For example, were the Commission to adopt the proposal by Fixed Wireless Holdings, Inc. and NextNet, Inc. that the lower and upper portions of the band

[4] See Second Coalition Supplement, at 1-3.

be reserved for FDD and the middle portion of the band be reserved for TDD, licensees of the A, B, G and H Group channels would be prevented from deploying TDD technology, while licensees of the C, D, E and F Group channels would be prevented from deploying FDD technology.[5] Not only might those restrictions disrupt existing deployments or business plans, but they might preclude licensees from deploying altogether if demand for TDD- or FDD-based services does not match the allocation. Indeed, such an approach could result in an absurd situation where operators are unable to meet demand for TDD-based services while the FDD spectrum lays unused. The flexibility inherent in the Coalition Proposal avoids that possibility, since usage of any given channel can be freely switched from TDD to FDD or *vice versa.*

Equally important to the success of the Coalition Proposal is the suggestion that "safe harbors" be utilized to govern co-channel operations near the boundaries of Geographic Service Areas ("GSA's").[6] This approach, which was not opposed by any party filing in response to the *NPRM,* is an innovative mechanism for maximizing the ability of licensees that have deployed non-synchronized technologies to provide ubiquitous service within their GSAs, including in border regions. CelPlan fully agrees with the discussion of the problems associated with providing co-channel interference protection near the GSA border set forth at pages 43-48 of the Coalition's Comments in response to the *NPRM* and endorses the Coalition's proposed solutions.[7]

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[5] See Comments of Fixed Wireless Holdings, at 5; Comments of NextNet, at 4.

[6] Second Coalition Supplement, at 3-7.

[7] Comments of Wireless Communications Association, et al, at 58 n. 115 ("Coalition Comments").

Finally, CelPlan endorses the proposal advanced in Footnote 115 of the Coalition's Comments for clarifying the manner in which GSA boundaries are established.[8] Although seemingly a minor issue, clarification of the methodology for calculating these boundaries now will avoid the possibility of disputes in the future. The proposal advanced in Footnote 115 fully resolves CelPlan's concern, and does so in a fair manner that can be easily implemented.[9]

Respectfully submitted,

CELPAN TECHNOLOGIES, INC.

By: /s/ Leonhard Korowajczuk

1835 Alexander Bell Drive
Suite 200
Reston ,VA 20191

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[8] See id. at 58 n. 115.

[9] The same concern CelPlan had regarding the calculation of GSA boundaries was expressed by ComSpec Corp. at pages 2-3 of its Comments.