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Marlene H. Dortch, Esq.
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Channelization in the 70/80 GHz Band
(WT Docket No. 02-146)

Dear Ms. Dortch

Yesterday, on behalf of Cisco Systems, Inc., I spoke by telephone with Jennifer Manner of Commissioner Abernathy's office regarding the proceeding referenced above. During the conversation, I reiterated Cisco's view both that the 71-76 GHz and 81-86 GHz bands should not be channelized, and that licensees should be permitted to use bandwidths of less than 5 gigahertz in each direction and expand as their capacity needs grow. The metaphor used many times in the record was that of a "spatial pipe" – a radio link between two points within which users would be permitted to use some or all of the spectrum, for a single pair of radios or multiple pairs, using any modulation scheme the licensee desired. By defining such "spatial pipes" and recognizing them flexibly, the Commission can enable manufacturers to meet the user's needs as precisely and as cost-effectively as possible and to provide the maximum possible flexibility for growth. This was the emphatic and virtually universal view of the terrestrial commenters in this proceeding.

I also expressed Cisco's concern regarding what might be called "soft channelization." Specifically, it would be possible to design a licensing process which, instead of authorizing the use of "up to 5 gigahertz" in each direction, at the user's discretion, forced the user to choose a bandwidth between 1 and 5 gigahertz in each direction (in 1-gigahertz increments) and then authorized only that bandwidth. Users would then be forced to modify their authorizations to the extent that they wanted to increase the capacity of their "spatial pipe." This would not be "hard" channelization, because users would be able to transmit (for example) a single 2- or 3- or 4-gigahertz-wide signal. However, this sort of "soft channelization" should be avoided in the interests of both efficiency and flexibility.

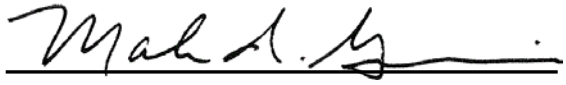
As an initial matter, the soft channelization approach would seem to require a great deal more administrative effort than can be justified by the actual likelihood of two users wanting to use the same "spatial pipe." Demand for data transport capacity grows; that is close to an immutable law. We therefore know to a moral certainty that an enterprise that needs 2 x 3 gigahertz today will need 2 x 4 gigahertz at some time in the future and 2 x 5 gigahertz at some time that is later still. We also know that it is very unlikely that any other party will need to use any of the capacity of the same "spatial pipe." And of course, in the very rare case in which another user did want to use the exact same spatial pipe, direct coordination with the licensed user would just as successful in identifying the "unused" bandwidth, at far less administrative cost. Limiting the initial authorization to 2 x 3 gigahertz seems therefore to require, needlessly, the submission of modification applications as the needs of the user grow, without any countervailing public interest. The NPRM in this case expressed great concern over the administrative burden; surely one way to address that concern is for the Commission to adopt rules that streamline licensing in the vast majority of cases, rather than to impose a regulatory cost in all cases that has a corresponding benefit only in exceedingly rare cases.

In addition, a "soft channelization" would require other technical rules for the 70/80 GHz bands, rules that would constrain technical flexibility. For example, if radios must be built to conform to bandwidths that are multiples of 1 gigahertz, then the Commission must also develop emission masks for such smaller bandwidths, as well as adjacent-channel rejection requirements. Furthermore, to the extent that buildout requirements apply, manufacturers would be forced to make their radios conform to the 1-gigahertz increments so that licensed users occupy precisely the bandwidth for which they are authorized. Because some modulation schemes do not "fit neatly" into 1-gigaghertz increments (and the same is true of any other standardized increment), this would complicate equipment design and raise the cost of equipment. Users authorized for less than 5 gigahertz would presumably be prevented from locating their center frequencies in the middle of each 5-gigahertz segment and leaving "guard bands" at the edges, even though there was no other demand for that particular "spatial pipe."

Cisco understands that it is simply second nature for the Commission to pursue a licensing process that limits users only to their immediate needs, so as to leave room for additional users. However, because these frequency bands are so much higher than the microwave bands with which the Commission has the most experience, that commendable instinct would in this case be wrong. In the 70/80 GHz bands, using a 2 x 5 gigahertz authorization for "only" 2 x 3 gigahertz of traffic is not a "waste of spectrum" because it is extremely unlikely to prevent any other user from being authorized for a second 2 x 5 gigahertz "spatial pipe" just a few yards away. On the contrary, what *would* be wasteful would be to take the one and only Fixed allocation wide enough for multi-gigabit speeds and encumber it with licensing rules more appropriate for sub-gigabit links. There is already plenty of Fixed spectrum in lower frequencies at which users with sub-gigabit needs can be accommodated. Cisco

therefore urges the Commission not to squander the unique potential of the 70/80 GHz bands by adopting a "soft channelization" approach.

Respectfully submitted,



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