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Mountain View, CA 94040

To: Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Subject: Experimental License / / STA Application
Date: 7 March 2004

Gentlemen,

An experimental license is being sought for the development of a consumer communications system. It will be necessary to perform field range and performance testing on equipment yet to be certified from time to time to verify performance in actual operating conditions.

The proposed experiment will study RF propagation characteristics, wireless routing and scheduling algorithms, quality of service and utilization of pre-production state-of-the-art equipment in various combinations to ascertain performance of the system under typical user conditions.

Justification of the quantity of units requested for experimentation.
The main objective of the proposal is to demonstrate the feasibility of the MetroFi system for a residential broadband network using standards based IEEE 802.11 A/B (Wi-Fi) technology.

Multiple Vendor Evaluation:
In order to have the highest possible chance of success in its deployment, MetroFi has contracted with multiple vendors to provide radios that will make up the network infrastructure. Evaluating multiple vendors obviously requires radios from each vendor be deployed, thus increasing the number of required radios above what would be required if only a single vendor were being evaluated. Due to the obvious risk of relying on a single vendor, it is in the best interest of MetroFi's business plan not to evaluate a only a single vendor

Wide Coverage Area Required:
The proposed transmitters will be located at temporary fixed locations within an 80 km radius of Mountain View, CA. In order to adequately cover an area of this size, a large number of radios are required. It is necessary to cover an area of this size in order to evaluate the RF propagation characteristics over various terrains. Initial evaluation indicates the RF propagation characteristics vary greatly between an area with many trees and hills to an area with fewer trees and a flatter terrain. In order to provide wireless connectivity to customers over a large metropolitan area, the performance of the network must be evaluated over these different terrains.

Large Quantity of Traffic / Beta Users Required:
In order to verify the capacity of the network, it must be "loaded" with many "Beta" users, each of whom are moving a substantial amount of data each day - as will be the case during typical use once the network is deployed commercially. In order to verify the performance of the network under this load, the radio density of the experimental network must be similar to the planned commercial network.

Additionally, a large number of "beta" users is required in order to replicate the various usage habits of typical network users, (amount of data moved, time of day of maximum / minimum usage, etc) in order to product a statistically significant result. Covering a large number of beta users requires an appropriately scaled network of sufficient radio density.

No Previous Data / Statistics
Due to the novel approach being taken by MetroFi in its execution of the wireless network, there is no previous usage statistics or propagation studies that directly correlate with what MetroFi is attempting. MetroFi, therefore, cannot simply rely on the research that others may have performed in the past. Thus, it is necessary for MetroFi to perform its own network performance analysis.

Summary:
MetroFi is cognizant of the fact that a relatively large number of radios are being requested during this experiment. MetroFi feels it has not overestimated the number of radios required. Rather, MetroFi feels that the quantity requested represents the minimum number required for a successful experimental network deployment.

MetroFi is eager to begin the field experimentation of its network and appreciates the responsiveness of the Commission. If the Commission has any questions or if additional information is required, please let me know.

Regards,

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