

FCC TAC Noise Sub Committee Status

November 30, 1999

At the initial TAC meeting, the FCC Requested that the TAC address the issue of electromagnetic noise. This is a summary of the committee's work on that issue.

Motivation

During discussions, the noise subcommittee noted that this was indeed a very important topic and one that needs additional effort. The subcommittee noted that trends were emerging that could substantially change the noise environment. These changes could impact the reliability of current systems and the viability of future communications systems.

One of the trends noted was the rapid growth of mobile communications technologies. There are currently 300 million cellular subscribers worldwide with that number expected to grow to more than one billion by 2005. There are also a number of emerging wireless technologies that are expected to result in a very large number of communications devices. These technologies include personal area networks such as Bluetooth that are expected to become ubiquitous as they are incorporated into cell phones and other devices. Wireless local area networks are beginning to emerge and will be deployed in homes, businesses, malls, and airports in large numbers. Mobile location technologies are beginning to be deployed and are expected to be found everywhere. Wireless to the home is beginning to be deployed and will connect large numbers of homes to the internet. Wireless sensors are being deployed in areas such as stores to easily identify merchandise and are expected to grow into mass market items as the technology matures. In addition, many more portable electronic devices are emerging such as organizers, games and entertainment devices which will also impact the noise environment.

These trends indicate that we could potentially be entering a period of rapid degradation of the noise environment. These changes could impact our ability to meet the communications needs of the country.

The sub committee believes that the FCC as trustee of the nation's spectrum resources should gather the appropriate information on the noise environment and review regulations to ensure that current communications systems are not compromised and that future communications needs can be met.

Proposal

During discussions, the noise subcommittee developed a proposal that the FCC could use for developing the necessary information (see the TAC web site: <http://www.jacksons.net/tac/>, Noise Environment Proposal).

The proposal consists of two major parts:

- 1 Develop a report based on existing information in the literature and from private companies to provide a consistent and comprehensive base of knowledge on the current noise environment.

- 2 Develop simulation tools and models of noise sources that enable the evaluation of the future noise environment. Noise models should be developed for major current sources of noise and sources that may be significant in the future. The noise models and models of communications systems should then be incorporated into simulations that will evaluate the impact of the noise sources on communications systems.