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Mr. Michael Wilhelm,

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The following is a summary of my comments on Sept 1, 2004, plus a few additional comments. SEP - 3 2004

Federal Communications Commission  
Office of the Secretary

Interoperable Wireless would like to point out that the rebanding order FCC-04-168A1, substantially addresses the interference created by IMDs, and not the interference created by either OOBE or "near-far." In California, this means that while Orange County Fire Dept attributes all of their interference problems to IMD interference, the Los Angeles Fire Dept continues to attribute all of their 800 MHz interference problems to "near-far" with no evidence of interference attributable to IMDs. Thus, FCC-04-168A1 may very well only solve some public safety operation problems near Nextel and other cellular sites, and still leave large exclusion zones around many Nextel and other cellular sites where public safety would still be unable to operate because of "near-far" interference or OOBE interference. Unfortunately, this also leaves Nextel in the untenable position of being having to pay "unlimited" additional funds to fix these problems as well, potentially an enormous cost burden.

Interoperable Wireless possesses a technology that it calls Micro-Simulcast. That technology could be applied to the 800 MHz interference problem to rebroadcast the composite waveform of the many channels from far away public safety sites at each of the Nextel and other cellular sites, thus raising the desired public safety signal levels near these sites to levels that a desensitized handheld/portable public safety radio can then operate. In this way it is very similar to installing a small Tx repeater at each affected site for increasing desired public safety Tx levels. However, a standard repeater would have extreme difficulty receiving the public safety signals for rebroadcast because of the very high Nextel and other cellular adjacent and out of band emissions in the areas directly around the affected site. Further, there is no requirement to rebroadcast the uplink component, as in a traditional bi-directional repeater. This approach would work up to the wideband AGC limit (desensitization) of portable and mobile units, perhaps to interfering "near" received signal levels to -35dBm or so, which, in turn, would shrink exclusion zones around Nextel and other cellular sites to around 30 or 40 feet.

Micro-simulcast uses fiber-optic delay lines to achieve wavefront matching (for micro-simulcast operation), and multi-carrier high power amplifiers with high gain antennas (for achieving desired EIRPs at both the main sites and the Nextel and other cellular emission sites). Micro-Simulcast requires no simulcast controllers nor voting systems and would permit public safety systems to operate irrespective of IMDs or OOBE from Nextel or other cellular systems (including interfering IMDs produced by nearby bimetal). Classical simulcast interference is eliminated by slightly offsetting the rebroadcast frequency of the composite waveforms by 20 Hz. For "near" Nextel or other cellular sites that happen to lie between two public safety "far" sites, the composite signal from two or three or more "far" sites can be combined and Micro-Simulcast together at the "near" Nextel or other cellular site. Interoperable Wireless's Micro-Simulcast will work at interference locations whether or not the underlying public safety architectures/protocols are P-25, EDACS, trunked, simulcast, conventional, FM analog, or TDMA (both Open-

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Sky or iDEN). Interoperable Wireless has used this Micro-Simulcast technology to implement Micro-Simulcast systems in response to extremely difficult interference problems (from military, not cellular systems) on a smaller scale at two locations: Ft Irwin, CA and Hohenfels, Germany.

Further, Interoperable Wireless proposes that the FCC be amenable to a bid from a large "deep pockets" company to privatize the entire rebanding operation, substantially including the function of the transition administrator, and have it administer the \$2.5B fund to implement both rebanding and incorporating Micro-Simulcast equipment. This bid would also include a minimum of \$1B for new P-25 equipment (in addition to the necessary rebanding and Micro-Simulcast equipment) to cover public safety systems that are too old to reband or have very difficult interference problems.

The Interoperable Wireless Micro-Simulcast approach is superior to FCC-04-168A1 and a win-win for every stakeholder in the 800 MHz interference issue.

This is a win for Nextel:

- 1) This will eliminate Nextel interference to public safety from near-far and OOBE, as well as IMDs
- 2) It would limit Nextel's cost at \$2.5B for public safety, capping their open ended financial exposure to 800 MHz interference problems.
- 3) It creates contiguous spectrum for high data rates services (ok, FCC-04-168A1 already did that, but it's important to them)
- 4) It would permit interference elimination to begin immediately at all locations (but more importantly, at critical locations), before and during any rebanding.

This is a win for other cellular companies:

- 1) It will fix their interference to public safety from near-far and OOBE, as well as IMDs
- 2) It would permit interference elimination to begin immediately at all locations (but more importantly, at critical locations), before and during any rebanding.

This is a win for utilities and other 800 MHz users:

- 1) Their composite signals can be rebroadcast at the same Nextel and other sites for essentially no additional cost, eliminating their near-far and OOBE interference problems.
- 2) It would permit interference elimination to begin immediately at all locations (but more importantly, at critical locations), before and during any rebanding.

This is a win for public safety:

- 1) It can be implemented immediately and solves both near-far and IMD interference immediately and through all 6 steps of rebanding.
- 2) It will provide \$1B of new P-25 equipment for application in critical interference areas.
- 3) The additional Tx sites in urban locations, coupled with new high Rx gain antennas at the initial public safety sites, will provide much better portable and mobile coverages, and result in improved inbuilding handheld operation.

4) Micro-Simulcast enables the FCC to allocate an additional 2 MHz of transition band to public safety (815-816/860-861 MHz).

This is a win for the FCC:

- 1) It solves IMD, OOB, and near-far interference to public safety
- 2) It solves IMD, OOB, and near-far interference to utilities and other 800 MHz users
- 3) It is a closed end technical solution, with closed end financial and other liabilities to all parties, and therefore amenable to modern management processes (such as a definitized schedule, regular reviews, risk reduction).
- 4) It would permit interference elimination to begin immediately at all locations (but more importantly, at critical locations), before and during any rebanding.
- 5) It privatizes the transition administrator and turns the search committee into a program management function overseeing a privatized transition administrator.
- 6) Micro-Simulcast enables the FCC to allocate an additional 2 MHz of transition band to public safety (815-816/860-861 MHz) if it desires (50/100/150 KHz data channels would be IW's recommendation).

If you have any questions, please contact me below at:

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