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**IEEE P802.11  
Wireless LANs**

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**Wireless "802 standard devices"**

Dear Buzz Rigsbee and Victor Hayes

I have an 802 issue on which I'd like your expert opinions. Here goes:

In the wireless LAN arena there are two tracks emerging in the 2.4GHz Radio Frequency Band. The first track contains implementations working to the 802.11 2.4GHz Wireless LAN standard, the second more disturbing track are implementations in 2.4GHz which sit over the 802.3 MAC.

All of these 2.4GHz RF implementations are calling themselves "standards" compliant. This is going to be a very big problem for me within The Boeing Company in 1998. I have attended three meetings to date (one as a consultant for The Boeing Company to our Commercial Airplane Group), and know of four 802.3 Wireless LAN implementations. These particular implementers do not follow the FCC Spread Spectrum channalization rules for part 15 and the PHY's run anything from Narrow Band to FHSS/DSSS Hybrids.

In examining the implementations and implementation architectures, the advantages these implementations present is that they are transparent bridges and do not have to perform the translation function required by 802.11 devices making them much faster in access point bridging functions. Also several do not abide by the PN code rules thus cutting down overhead and increasing throughput significantly. For example by loosing that constraint a 1Mbps FHSS/DSSS implementation can produce throughput rates of 935kbps Vs 700kbps - 650kbps throughput of a 802.11 device. This of course becomes a seductive selling point when these vendors are talking to folks unfamiliar with networking and radio issues. The disadvantage of these implementations of course is that they do not interoperate, they are not scaleable, they require cell design to implement them, some lack mobility and above all they present an extreme interference issue with the 802.11 2.4GHz devices.

Because these vendors claim to be standards compliant because of the 802.3 MAC they tout themselves as IEEE 802 standards devices. I am forceful with my concerns that these devices present to both the vendors making them and the Boeing individuals looking at the products but I feel the 802.11 2.4GHz devices' (vendors and committee) will be unfairly penalized with the existence of these (802.3) radio devices and thus suffer throughput and retransmission problems because of the (802.3 device) interference.

In one case in particular the device (with 802.3 MAC) if encountering an 802.11 device automatically raises it's power levels increasing the noise floor to such a degree that the 802.11 device is drowned out. I am also especially concerned with this issue because it can easily drive the device transmission power over the 1W FCC limit. (This device starts out at 100mW, then moves to 250mW, then to 500mW and finally blasts out at 800mW! If this implementation uses anything but a 0 gain antenna they are easily over the 1W FCC ruling and pose health and safety concerns.)

I'm not sure if the 802 committee is aware of this issue, but I feel it is important to let both the 802.11 and 802.3 chairpersons know that this is happening. It may also be a matter for the FCC? I need some type of direction from (both 802 and FCC.) I will also forward this note to Joel Rogneby our Company Wide Frequency Management Manager and see if The Boeing Company FCC representative can get this issue discussed in the FCC.

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