
IEEE P802.11
Wireless LANs

Reconciliation Proposal for TGb

Date: May 7, 1998

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Abstract

The selection process for TGb ended in a stuck state in which not only procedural problems surfaced, but also the selected proposal had no real chance of gaining 75% support at the 802.11 Plenary. This document proposes a path to resolve that situation by creating a Reconciled Proposal which will combine the best ingredients required to make that proposal acceptable to the widest possible audience. I suggest the reconciled proposal to be:

- As a basis, use Micrilor's proposal, modified to operate at 22 Mchip/s.
- Change the waveform specification so that it does not force GMSK pulse shape but rather allows standard DS pulse shape with appropriate spectral and temporal masks.

The suggested Reconciled Proposal addresses many of the concerns raised by other proposers and the audience. In particular:

- It has three frequency channels, with center frequencies coinciding with present DS
- It significantly simplifies coexistence/interoperability/downstepping-to legacy 1-2 Mb/s DS.
- It operates with OQPSK waveforms, which are desirable for peak-to-average power reduction and operating the PA close to the saturation. In that sense, it absorbs the best also from Raytheon proposal.
- It is very robust, because it doesn't (ab)use both quadrature components for transmission of independent information. In terms of delay spread tolerance, it increases by 45% (because $32 \text{ Mchip/s} / 22 \text{ Mchip/s} = 1.45$). It is easy to extrapolate the curves just by rescaling the multipath numbers by same amount.
- It achieves both the 8 Mbit/s PAR objective and the "golden number" of Ethernet-like 10 Mbit/s speed in the 4*4 mode in which the speed becomes $12.375 \text{ Mbit/s} = 18 \text{ Mbit/s} * (22/32)$, which for marketing needs can be denoted as "Twelve Mbit/s". In the regular mode the speed is $6.875 \text{ Mbit/s} = 10 \text{ Mbit/s} * (22/32)$, which for marketing needs can be denoted as "Seven Mbit/s", which is a nice achievement for the group, also in terms of perception of the public.

In my perception, the other major proposers, Lucent and Harris, are both fluent with the technology needed to implement the new proposal and (besides the delay caused) should prefer this proposal to the stall in which TGb is at the moment. I urge all the major proposers to accept this compromise, which will certainly, once the major proposers agree, pass the 75% hurdle.

Naftali.