IEEE P802.11
Wireless Access Method and Physical Layer Specifications

Title: **The Need for a <u>Flexible</u> Standard**

Authors: Dr. David Bantz
              IBM Corporation
              T.J. Watson Research Center
              P.O. Box 704
              Yorktown NY 10598
              Tel.(914)-784-6808
              Fax:(914)-784-7007
              E-mail: bantz@watson.ibm.com

Reference:

Introduction

This submission contains the presentation from D. Bantz (IBM) at the 802.11 July 1993 meeting.

The Need for a <u>Flexible</u> Standard

    * many distinct uses for wireless

       telephony
       messaging and dispatching
       data collection
       wireless LAN
       wireless access to wired LAN

    * each user will have <u>multiple</u> uses for wireless

       retail clerk:

          data collection
          client-server computing
          telephony and public address

       business traveler:

          client-server computing (on campus)
          wireless LAN
          messaging and dispatching
          telephony

Multi-use Systems

    * Today's users have multiple needs, and multiple devices

       phone, fax, PC/LAN, PA system, ...

    * But mobile user need <u>multipurpose</u> devices

    * So: Wireless standards must be flexible and multipurpose

       - multiple topologies
       - multiple traffic patterns
       - variety of design points
            variety of coverage area

R-TDMA's Suitability

* multiple topologies

central control
distributed control
     via migratable sites of control
     via rotating sites of control

* multiple traffic patterns

synchronous, asynchronous, and mixed
priority traffic
any-to-any, remote-to-base
symmetric, asymmetric

* variety of design points

- subsettable
     contention only
     fixed reservations
     other possibilities

- low cost potential
     receive/transmit turnaroud time can be long
     simple remote (with base)
     power-saving

- high performance potential
     no listen-before-talk time per packet
     overlapped link turnaround
     OK with directional antennae (with base)

- high coverage potential
     minimize self-interference with coordinate bases
     long range potential
          - minimal performance dependence on propagation delay
          - OK with directional antennae

* R-TDMA has been used in an extraordinary variety of designs

DECT
CDPD
satellite systems
paging
data collection
wireless LAN
wireless access to wired LAN

Summary

* R-TDMA is a <u>proven</u> technology

    many, diverse examples of use
    high adaptable and subsettable
    broad coverage of user needs

* R-TDMA promises multipurpose devices

==> a long-lived, versatile standard