

## IEEE P802.11, Wireless LANs

**Structural Needs for an IR-Standard**

Due to limitations and problems of wireless data communication via radio, many equipment manufacturers are pushing new devices into the market, that use IR data communication.

Those IR devices from different manufacturers will have to work independently from each other, and are not supposed to run in the same environment in terms of common infrastructure, application programs and so on.

*Having only ONE channel in the IR-PHY available for all these applications and manufacturers would*

- heavily limit the size of the available market to both, the component manufacturers as well as the equipment manufacturers
- influence negatively the idea and the technical impact of the IEEE802.11, which should include a unified structure and performance for all PHY's (also the IR-PHY's !)
- prevent worldwide standardisation due to the lack of acceptance of baseband solutions by the several standardisation committees
- make virtually all existing products obsolete in the case, that a de-facto-standard comes up which is not a narrow-band solution.
- limit the size of installations due to the lack of expandability of single channel solutions.

A specific step into the wrong direction is the present status of the IRDA-activity. It is

- technically not good enough to fullfill the requirements of present and future professional wireless data communication (net data rate, communication distance/transmitting energy)
- only point-to-point, thus has no networking capability (and will never have!)
- not able to coexist with other (existing and/or further) products
- (the 1 or 3m restriction is just virtual because of the low sensitivity of the receiver)

A potential solution to this problem is a flexible architecture, presented by AndroMeDa under the name EXIRLAN (EXpandable IR LAN) during the IEEE802.11-session in November 1993. It

- provides high speed, multichannel operation
- will support IEEE802.11-MAC
- can be implemented using slightly modified low-cost semiconductors
- has been designed to operate with cheap IR emitters
- coexists with existing products
- could include a very low cost, baseband option using one specific channel ("coexistence channel"), which may be an existing solution, IRDA or any other

The total market addressed by this activity can be judged by the figures of different market research organisations guessing about market figures for higher price-level sub-notebooks, palmtops, pen-PC's and PDA's:

Mio units sales US	1994	1995	1996	1997	total
BIS Strategic Decisions	0,8	1,2	2	3	7
Gartner Group SRI International		17			12,4

To promote such an open, universal system fast enough, it is required to combine activities of both, system implementers and semiconductor manufacturers to work extensively at the draft and first HW.

AndroMeDa has established so far contacts to

- three (3) US SYSTEM implementers
- one (1) large German communication company\*
- two (2) semiconductor manufacturers, that already have components coming close to EXIRLAN's needs.

\* the German communication company is KRONE AG (actual turnover 1 billion \$), who licensed AndroMeDa's system

The next steps will be:

- Agree to an industry association formally between foundation companies
- Implement an operational organisation
- Approach and bring in additional members to the association
- Propose the common draft in a more detailed form to IEEE802.11