March 1997 doc: IEEE P802.11-97/33

HSSG PAR Proposal- a Report

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PAR Title

- Standard for Physical Layer (PHY) for High Speed Wireless Local Area Networks (LAN) in the 5 GHz band

Submission: High Speed PAR Study Group Report Naftali Chayat, BreezeCom

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PAR Scope

- To develop a High Speed (circa 20 Mbps) PHY for use in fixed, moving or portable Wireless Local Area Networks. The PHY will be used in conjunction with the 802.11 Medium Access Control (MAC)

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PAR Purpose

- To create a high speed wireless access technology suitable for data, voice and image information services. This technology should be beneficial for improved access to the Global Information Infrastructure and wired LANs, as well as creation of high performance ad hoc networks.
- The project will focus on communication techniques which use the spectrum efficiently and enable a high aggregate throughput, as well as high speed for an individual network.

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Coordination

- US TAG
  - Circulation of Drafts
- ETSI - RES10
  - Circulation of Drafts
  - Common Membership

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Five Criteria

- Broad Market Potential
- Conformance with 802
- Distinct Identity
- Technical Feasibility
- Economic Feasibility

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Broad Market Potential

- **Applications (per FCC docket 96-102): education, medical, business, consumer, telecommunication extensions and community Internet access.**
- **Voice,Video and Data.**
- **wireless LAN speed matches WAN.**
- **US government supports wireless access to information.**
- **Overlap with a 5.2 GHz band in W. Europe.**
- **Coordination with worldwide regulatory bodies.**
- **High degree of interest ensures multiple vendors**
- **Acceptable cost**

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Compatibility with 802

- The compatibility with IEEE 802 requirements will result from the use of 802.11 MAC, which itself was developed to be compatible with those requirements.

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Distinct Identity

- usage of spread spectrum techniques in no longer required,
- and wider bandwidths are allowed.
- PHY standard will provide for high performance (circa 20 Mbps)
  - asynchronous wireless data communications
  - time bounded services

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Technical Feasibility

- 5 GHz technology exists
- complexity comparable to XDSL, cable modems, satellite DVB
- The cell radius reduced by 40%.
- No interference from microwave ovens.

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Economic Feasibility

- 5 GHz radio cost dropping
- The modem ASICs will be somewhat more expensive than current 2.4 GHz modems.
- Overall cost of a 5 GHz high speed LAN adapter almost same as current 802.11 adapter.
- The installation of 5 GHz devices at the stations same
- The infrastructure cost higher; compensated by throughput

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Changes from Yesterday

- 25Mbps to 20 Mbps
- Not specific to GII
- Authority to correspond with Reg Bodies
- CCA independent from MAC
- Uses 802.11 MAC as is
- Quality of service mentioned
- Reduced Liasons (No Reg, No Forums)