Wireless Personal Area Network

IEEE 802.11 Study Group Report on Attribute Requirements November 10, 1998

WPAN Application Introduction

- The WPAN Study Group issued a Call for Applications (**doc.: IEEE 802.11-98/295)** on July 24, 1998.
- During the interim meeting held during September 1998 in Westford, MA, six of the application submissions were presented to the study group. A seventh was received after the meeting.
- Based upon these inputs, the study group selected a set of 16 attributes which were deemed sufficient to capture and summarize these applications. During the November meeting these attributes were refined and prioritized.

November 1998 doc.: IEEE 802.11-98/353

WPAN Application Summary

Submitter ← Attributes →

	# of Active devices in 1 PAN	Min. device	Attachment/Initialization	Data types	Link eff. Data throughput	Conn. to other n/w
Boeing	2 to 8	WinCE	Manual auth/auto attach	Data/VoIP	19.2 to 64 kbps	802.11/PCS
Fedex	6 to 16	Printer	Manual auth/auto attach	Data/Voice	19.2 kbps	Private and Public
Symbol/Wearable	8	Scanner	Manual	Data	19.2 kbps	802.11
TI	30-128	Graphing Calc/PDA	Manual auth/auto attach	Data	19.2 kbps	802.3/802.11
PED	8	Sensor	Manual auth/auto attach	Data	9.6 kbps	Yes
Bob O'hara	8	PDA	Manual auth/auto attach	Data/Voice	1 Mbps	Yes
Kodak	4	Camera	User invoked	Data+Isoc	10+ Mbps	Yes

	Inter PAN conn	# PANs co-exist	Power	Range	Size	Mobility Speed	Topology	Encryption within MAC	MAC level IP support
Boeing	Yes	2	WinCE for 8 hrs	10-15m	1.5"x1.5" (Compact Flash)	10 mi/hr	Don't care	Yes	Yes
Fedex	No	30	30mW avg (10hr)	10m	.5"x1.0"	10 mi/hr	Peer-to-peer like		No
Symbol/Wearabl	No	4 to 8	30 mA, 100 uA	10m	.5"x.5"	Don't Care	Don't care	No	No
TI	No	4	30 mA, 100 uA	10-15m	.5"x.5"	10 mi/hr	Master-Slave	No	No
PED	No	10	10-15 day batt	2m	.5"x.5" (4 oz. Wt)	N/A	Master-Slave	No	No
Bob O'hara	Yes (Manual)	20	WinCE for 8 hrs	10m	.5"x.5"	10 mi/hr	Don't care	Yes	Yes
Kodak	No	4	Low	60m	.5"x.5"	10 mi/hr	Don't care	No	No

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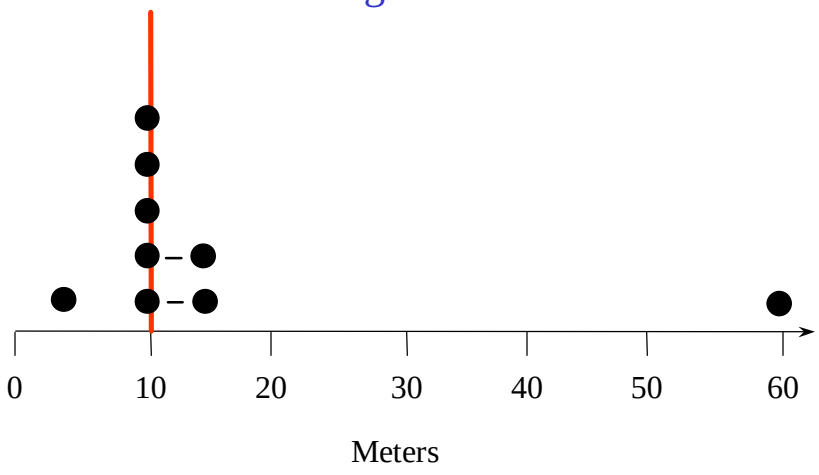
WPAN Application Attribute List

- Power consumption (power)
- Range (range)
- # of devices associated in one network (devices)
- Native Encryption (encrypt)
- Attachment/initialization procedures (joining)
- Network topology (topology)
- Packet data (packet)
- Isochronous data (isoch)
- Maximum device response time (response)
- Net device throughput (rate)
- # of independent but coexisting networks (density)
- Size (size)
- Relative speed between devices (mobility)
- Native IP (NIP)
- Connection to other networks (gateway)
- Coexistence with 802.11

Range



WPAN Attributes Requirements Prioritization

Priority

Consensus	High	Low
Strong	Must haves #1	Nice to haves #3
Weak	Warring camps #2	Apathetic bickering #4

WPAN Application Feature List

Priority

Consensus	High	Low
Strong	low cost low power small size packet data ≤ 1 Mbps range ≤ 10m active devices ≤ 10 manual auth/auto attach coexistence with 802.11	packet + isochronous encryption mobility ≤ 10 mph gateway native IP
Weak	topology active devices 10 - 128 coexisting PANs 4-30	inter-pan connectivity

Detailed PIC Suggestions
are summarized
in -98/322r2 & 323