Straw polls on possible design goals

This document represents the results of the straw polls held during the May 1991 meeting of the Working group held at Worcester. This paper should not be quoted as representing the position of the working group.

The numbers in the left hand column are the results in the following order:

support, against, no opinion.

where no numbers are given, no polls were held.

contentious	Modulation and protocol shall be chosen to support benign and malignant radio environment. The malignant environment includes: * high delay spread, * high vehicular speed, and * interference including - narrow band fixed frequency, - narrow band variable frequency (microwave oven) in that band, and - impulse noise sources meeting the Cantor dust fractal model.
24, 0, 0	portable to be supported
15,15, 2	heavy duty desktop to be supported
21, 3, 4	small desktop environment to be supported: e-mail type in any office
17, 5, 4	in a large office environment e-mail type 200 people, low data rate:
20, 2, 4	factory environment:
19, 0, 5	retail to be supported:
4, 4,15	home computer environment to be supported:
18, 1, 8	campus to be supported (including open space):
23, 2, 0	hospital environment (many mobile instrument, a lot of interferers):
	isochronous:
12,16, 1	real time voice:
18, 3, 9	real time process data:
9,11,11	compressed video:
	Protocol shall provide deterministic response and throughput to registered users (a station just powered on may take statistical time to become registered).

14, 11, 7	Support deterministic response:
4, 7,19	support deterministic throughput:
33, 0, 2	Modulation and protocol shall permit close or interpenetrating radio LANs using this standard that are not intentionally coordinated.
25, 1, 4	The MAC, and MUX and possibly PS shall support multiple PMDs.
14, 6, 9	The Protocol and Standard Distribution System shall support concurrent operation of PMDs running at different data rates.
0,21, 8	The MUX, PS, and PMD shall be optimized for isochronous service. The MAC shall coordinate with the Isochronous MAC.
11, 8, 4	The SMT will support both the data and isochronous MAC existent within a single station.
23, 0, 0	No single point failure in a station shall cause more than temporary interference to the other stations in the network.
20, 1, 1	No single point failure shall take out the BSA for more than a short time.
17, 0, 4	The network must be robust - it shall degrade gracefully - it shall recover quickly from disruptions - it shall protect itself from failed components.
24, 0, 0	The protocol shall allow for a range of performance levels that support cost sensitive and performance sensitive markets.
13, 0,10	The protocol may, if necessary, sacrifice simplicity of protocol design for ease of application.
19, 0, 2	Protocol shall support high local intensity (that is inhomogeneities)_(traffic density per unit area)
21, 0, 2	The standard shall support power sensitive applications.
18, 0, 5	The standard shall support a form of direct peer to peer communication - though this may require one of the peers to - temporarily at least - create a BSA infrastructure ,
2,12, 6	That which is not forbidden is mandatory.
7, 3,10	Optional features should be avoided, though unused features may need to be shut off - by SMT.
10, 2,10	single station (that is MAC) shall be able to service multiple PMDs (the MUX or PS) .
18, 0, 5	We will support roaming moving stations and roaming fixed stations.
16, 2, 5	A roaming station moved to a new geographic area that has the same class BSAs compliant with this standard must be able to operate in those BSAs.
20, 2, 1	Protocol and PHY shall be designed so that cost of network start up and expansion shall be minimized.

	coverage flexibility
19, 1, 3	The Back Channel Interface (when not wireless) that connects BSAs in an Extended BSA (EBSA) (and intimately related group of interpenetrated BSAs), should, as much as possible, be or use components of existing LANs.
10, 2, 9	The BCI (when not wireless) that connects BSAs within an ESA will use an existing LAN or MAN.
21, 0, 2	Easy connection of the BSA/EBSA/ESA to MAN or WANs that is transparent to the users.
10, 0,13	Support wireless connection (BCI) between BSAs and EBSAs and maybe ESAs.
5, 5,13	We should support a pure wireless backbone supported.
7, 1,14	Allowance for direct node to node communication for in range nodes not within an established BSA.
9, 0,14	The SMT can prevent the election of a MAC to access point status in a power crisis state, or under user control.
4, 1,14	SMT can flag the MAC to transition out of the BSA head end mode when traffic is zero for more than a setable time/loops parameter is reached.
5, 1,17	A new BSAAP can signal the current BSAHE to swap out.
skip	A current BSAAP_can negotiate with a MAC with BSAAP transition enabled to prepare for, and swap out after contention resolution to select which enable MAC to use. support:
skip	Obviously if a BSAAP dies, there must be a perhaps awkward way for a new AP to come in.
skip	BSAAP activity will inhibit isolated MACs from BSAAP transition, this may require a state variable in MAC or SMT.
8, 6,10	BSAs shall shrink, increasing throughput, by merely increasing BSA density. (Assumes use of near far)
skip	Power control allows total emitted noise to remain the same.
18, 0, 4	Scalability is a design goal.
skip	Power control shall be within the PMD_layer, with possible SMT override, but how do you deal with broadcast MAC data units.
skip	Power control will be table driven by SMT.
13, 2, 6	MACs shall be the same, no optional functions,
skip	so all MACs support the god transition.

6, 7, 8 Our network must have better burst data rate, or at least better throughput, than some economically successful existing wired LAN.

7, 0, 7. refer the latter part of the W3 to a group headed by Larry to format a survey form

Design goals

square feet per user - Average spatial density of users

Data rate per user (burst and throughput/sustained)

End to end response time (for registered station)

Differential end to end response time at the LLC layer (data or and isochronous) - Node to node within BSA, within ESA, and Node to foreign (exogenous) interface.

Registration time (cold start access time)

attenuation/distance to nearest co resident LAN (adjacent or interpenetrating)

distance or attenuation to nearest neighbor node (minimum and maximum to peer node within a BSA)

Distance or attenuation to nearest access point (min max)

Maximum operational velocity.

Interferer profile that must be tolerated.