IEEE P802.11

Wireless Access Method and Physical Layer Specifications

Proposal for PAR

Attached is a Project Authorization Request Form completed at the IEEE P802.11 meeting held at La Jolla, CA, 4 November 1990. The Working Group passed (unanimously) a motion to submit the PAR to the Executive Committee for further processing. The Executive Committee passed the following motion unanimously:

That the 802.11 PAR (IEEE P802.11/90-19) be approved for submittal to NESCOM by the P802 Executive Committee. Further, that the PAR for 802.4C be withdrawn concurrent with the approval by NESCOM of the 802.11 PAR.

T

2

This page has been left nearly blank intentionously.

.

IEEE Standards PROJECT AUTHORIZATION REQUEST (PAR)

L. Date of Request:	1990-11-15				2. Assigned Project	# :
B. Does this PAR revise a previous Note: see PAR 802.	ously approved PAR? YES 4c withdrawal		X_NO			
. Description of	Standard	x	New			Trial Hee
Proposed Document:	Recommended Practice Guide	1	Revision	of Std		Full Use X_
. Project Title:						
Wireless	Access Method and Physical I	ayer Spe	clfications			
. Scope of Proposed Standard	: (Use attachment sheet (frecessary)					
o develop a Medium Access	Control (MAC) and Physical L	ayer (PH	Y) specifica	tion for wireless co	nnectivity for fixed,	
ortable and moving station	s within a local area.					
	Refer to the attachment for	letails				
. Purpose of Proposed Standa	rd: (Use attachment sheet (f necessary)					
a anadia adalah asasat	-9444					
ortable, or hand-held or whi	vity to automatic machinery, ich may be mounted on movir	equipme ig vehicle	nt or, stations within a l	ons that require rap local area.	id deployment, which	may be
o offer a standard for use by	regulatory bodies to standa	rdize acc	ess to one o	r more radio frequ	ency bands for the pu	rpose of
ocal area communication.				- 0:		
	Refer to the attachment for o	letails				
. SPONSOR: Society:	Computer Society					
Committee:	Technical Committee on Con			(7000)		
committee.	Technical committee on con	aputer Co	5mmunicat	ons (TCCC)		
. Name of Group that will writ	te the standard: IEEE P80	2.11				
0. Target Completion Date:	1992-12-31					
1. Proposed Coordination: (Se	e Instructions)					
SCC10 (IEEE Diction	nary)				Method of Coordinatio	on:
	Refer to the attachment for	letaila				
2. Are you aware of any pater	it, copyright, or trademark issue	:s?			X_YES _	NO
Are you aware of any standa	rds or projects with a similar so	ope?			X VES	NO
	lfyes, attach a	sheet with a	complete descrip	ion of the impact of the simile	rtties.)	
CAR as approved by I	² 802.0		page 3			

T

PROJECT AUTHORIZATION REQUEST (PAR)

(cont'd)

13. Copyright Agr I hereb Standa	eements for IEEE Standards by acknowledge my appointment as Official Reporter to ards Publication (entitled or to be entitled) Wireless A	theIEEE P802Committee to write/ revise a Access Method and Physical Layer Specifications				
In cons Reporte without Copyrig said St	ideration of my appointment and the publication of the Standa er, I agree to avoid <u>knowingly</u> incorporating in the Standards Pu t such other's consent and acknowledge that the Standards Pu ght Act, and, that as to any work not so defined, I agree to and andards Publication to IEEE.	ards Publication identifying me, at my option, as an Official ublication any copyrighted or proprietary material of another blication shall constitute a "work made for hire" as defined by the do hereby transfer any right or interest I may have in the copyright to				
	NameVic Hayes					
	(chair of working group)					
	TitleChairman IEEE P80	2.11 Working Group				
	Date					
14. Person delega	ted to receive communications and conduct lieison with interes	ated hodies				
(This is no	mally the chair of the working group. If not please indicate IEEE position.)	stu bouts.				
Name	Vic Hayes	Telephone +31 3402 76528				
Company	NCR Systems Engineering b.v	Fax+31 3402 39125				
Address	Zadelstede 1-10	Telex47390				
City	NieuwegeinStateNL	Zip_3431 JZE-Mail_Vic.Hayes@Utrecht.NCR.COM				
15. Submitted by:						
(This is no	rmally the sponsor's liaison to the Standards Board. If not please indicate IEEE position of	and relationship to the energy of				
Name	Donald C. Loughry	Telephone 408 447 2454				
Company	Hewlett-Packard Company	Fax408 447 3660				
uddress	19420 Homestead Road, M/S 43UC	Telex				
City	CupertinoStateCA	Zip_95014_E-Mail_Don.Loughry%HP6600@HPlabs.HP.COM				

November 1990

6. Scope of proposed standard

To develop a Medium Access Control (MAC) and Physical Layer (PHY) specification for wireless connectivity for fixed, portable and moving stations within a local area.

Type of medium

The goal is that the MAC shall support PHYs using electromagnetic waves through the air (i.e. radio waves as well as infra-red or visible light).

PHY layer suitable for use with the electromagnetic frequency spectrum as described in the following paragraph will be defined with this standard. If evidence of need and sufficient interest exists other PHY layers will be considered at a later time.

Radio spectrum

Currently the only available unlicensed spectrum is in the ISM bands in the USA provisionally 915 MHz band in Canada and Australia. Test programs are underway in the UK and elsewhere, evaluating license free operation.

e initial effort will be for the ISM bands and to consider the use of additional bands beyond ISM.

However, these ISM bands are already heavily used, and it is felt that service degradation from other users will happen, increasing with time. Therefore, in order to further development of the standard, the 802.11 committee should participate in the development of changed or new regulations for short distance radio services in which all authorized users of any new frequency allocation shall be permitted to radiate only a defined maximum power density. The goal is to provide regulations which allow for an easy approval process for the end-user.

To further enhance the standard the 802.11 committee will undertake to document the benefits of, and make recommendations for international spectrum allocation and use, where possible.

Supported Stations

The standard shall support stationary stations, movable stations, and mobile stations moving at pedestrian and vehicular (local premises environment) speeds. This is to be implemented with one PHY if feasible.

Environment

Because the range of wireless transmission / reception may be smaller than the physical coverage area desired, a distribution system designed to provide range or tensibility will be addressed as part of this standard.

The standard will include support of the following:

- Basic Service Area (BSA) in which each station can communicate with any other station in the BSA.
- Extended Service Area (ESA) in which each station can communicate with any other station via the defined and managed Distribution System.
- Stations which interoperate in both BSA and ESA shall be defined if feasible.

Possible target environments include:

- * in buildings and other premises such as offices, financial institutions, shops, malls, small and large industry, hospitals and residences,
- outdoor areas such as parking lots, campuses, building complexes and outdoor plants and storages.

Note: The definition of performance classes within a PHY may be necessary to support environments with benign or hostile characteristics.

Supported service

The Wireless MAC shall support both connectionless service as defined in the MAC Service definition at rates between 1 and 20 Mbit/s as well as a service supporting packetized voice.

Compatibility requirements

The specification shall meet the following standards and documents:

- the IEEE P802 Functional Requirements including section 5.6.1 (in version 6.5) as defined below:
 - "5.6.1 The MAC Service Data Unit (MSDU) loss rate shall be less than 4*10E-5 for an MSDU length of 512 octets.".

A minimally conformant IEEE P802.11 network will meet all of the P802 requirements except that 5.6.1 will be met at least 99.9 % of the time on a daily basis, in 99.9 % of the total geography of the service area.

IEEE P802.11 will define approaches to allow a minimally conformant network to achieve full conformance over the total geography of the service area.

- IEEE 802.2 MAC service Definition
- ISO 10039 MAC Service Definition
- IEEE 802.1 A Overview and Architecture,
- IEEE 802.1 B for LAN/MAN Management,
- IEEE 802.1 D for T and SRT bridges,
- IEEE 802.1 F for Guidelines for the Development of Layer Management Standards,
- IEEE 802.10 Secure Data Exchange.

The standard shall anticipate restrictions on Electromagnetic fields and pulsing of Electromagnetic fields due to potential biological hazards.

7 Purpose of proposed standard.

To provide wireless connectivity to automatic machinery, equipment or, stations that require rapid deployment, which may be portable, or hand-held or which may be mounted on moving vehicles, within a local area.

To offer a standard for use by regulatory bodies to standardize access to one or more radio frequency bands for the purpose of local area communication.

Note: To make this purpose feasible, this PAR also authorizes IEEE P802 to petition or provide comments to regulatory bodies worldwide (e.g. the FCC in the USA, the Department of Communications in Canada, the RF agency of the Department of Trade and Industry in the UK and the Radio Frequency Commission of the CEPT of Europe)

10 Target completion

Architecture definition available	March 1991
First draft standard ready for ballot in 802.11	Nov 1991
First draft conformance standard ready for ballot in 802.11	March 1992
TCCC ballot of MAC & PHY standard	July 1992
TCCC ballot for conformance standard	Nov 1992
Submission to ISO of MAC & PHY standard and conformance standard	Dec 31, 1992

11 Proposed Coordination

CCIR Task Group 8/1 (formerly IWP 8/13)	draft circulation
CEPT/RFC/FM	draft circulation
ETSI RES	corresp/membership overlap
ECMA TC32/TG10	corresp/participation
\ SP-50	membership overlap
SCC10 (IEEE dictionary)	draft circulation
ASC X3S3	draft circulation
ISO/IEC JTC1/SC6/WG1 and WG3	Through ASC X3S3
ASC T1P1	correspondence

12. Patent, Related Project

Patents potentially relevant to the work of IEEE P802.11 are known to exist.

CCIR Study Group 9 owns a project designated "Question AM/8 or Z/9" titled "Radio Local Area Networks". To date there is no understanding of the level of interest of the project.

To prevent duplication of effort, IEEE P802.11 has requested the mandate to liaise to CCIR.