

Functional Requirements

IEEE Project 802.11

Wireless medium MAC and PHY standards group (put official name here)

DRAFT

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Introduction:

This document contains the agreed upon definitions and functional requirements for 802.11.

Definitions:

The following definitions are used within this document:

BSA: A set of wireless media interfaces controlled by a common coordination function.

ESA: A set of BSA's interconnected via an 802.11 conformant distribution system.

Station: Any device which contains a wireless media interface.

Documents which contain functional requirements that are hereby incorporated as 802.11 functional requirements:

802 Functional requirements P802-91/152

802.11 PAR (need doc number here)

The 802.11 PAR supersedes document P802-91/152 where they conflict.

Functional requirements

The primary service provided by 802.11 is to deliver MSDU's between LLCs.

All 802.11 implementations will support a common coordination function.

802.11 will provide two services:

- An Asynchronous packet delivery service
- A time based packet delivery service.

All 802.11 implementations will support the Asynchronous service.

A single MAC shall be used to support all coordination functions.

A single MAC will be used to support multiple PHYs.

Stations using the async and/or time-based services must coexist within the same BSA.

Continuity of service to the LLC layer across interconnected BSAs shall be provided.

The standard shall support registration services.

The standard shall support authentication services.

The standard will support network management services.

Any function or service unique to wireless networks will be handled within the 802.11 standard.

Coordination functions may be centralized or distributed in nature.

There are several combinations of coordination functions and BSA/ESA network types:

type	coordination function		connectivity type	
	distributed	central	local BSA	ESA
A	x		x	
B	x		x	x
C		x	x	
D		x	x	x
	distributed		centralized	
BSA	A		C	
ESA	B		D	

Types A, C, and D, must be supported.

A single MAC/PHY interface will be defined.

If the MAC/PHY interface is exposed, the single MAC/PHY interface must be adhered to.

There will be a default coordination function and there will be a method for changing from the default coordination function to the other coordination function.

There shall be mechanisms defined to resolve media use conflicts.

The Mac must accommodate any PHY transmission rate between 1 and 20 Mbs.

Additional mechanisms beyond 802.10 shall be provided to address security issues unique to 802.11.

The 802.11 MAC and Phy will support the applications described in the 802.11 market requirements document.

802.11 will support multicast services.

Other Functional Requirements Issues.

- Data Density
 - Bit rate (1-20)
 - Station Per
 - Range.
- Number of Stations.
 - 200 min
- Station Mobility.
 - Coordination in ESA
 - Security
 - Management
 - Location.
- Delay
 - Worst Case access delay
 - Worst Case Transfer delay
- Latency
- Throughput Probabilities
- Robustness.
- Stability under Heavy load.
- Attenuation.
- Transmission Loss
- Error Rate
- Area