

## IEEE Standards

	802.11a	802.11b	802.11g	802.11n
<b>Maximum Throughput</b>	54 Mbps	11 Mbps	54 Mbps	300 Mbps
<b>Frequency</b>	5 GHz	2.4 GHz	2.4 GHz	2.4/5 GHz
<b>Modulation</b>	OFDM	DSSS	DSSS/OFDM	OFDM
<b>Channels (FCC/ETSI)</b>	21/19	11/13	11/13	32/32
<b>Ratified</b>	1999	1999	2003	2009

## WLAN Types

### Ad Hoc

A WLAN between isolated stations with no central point of control; an IBSS

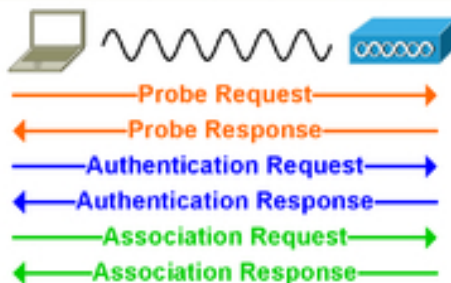
### Infrastructure

A WLAN attached to a wired network via an access point; a BSS or ESS

## Frame Types

Type	Class
Association	Management
Authentication	Management
Probe	Management
Beacon	Management
Request to Send (RTS)	Control
Clear to Send (CTS)	Control
Acknowledgment (ACK)	Control
Data	Data

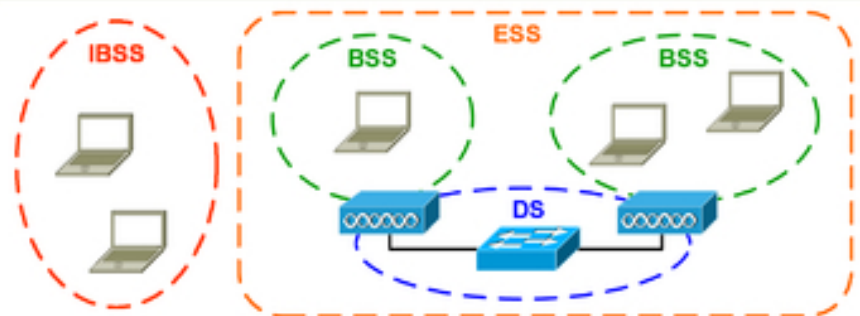
## Client Association



## Modulations

Scheme	Modulation	Throughput
<b>DSSS</b>	DBPSK	1 Mbps
	DQPSK	2 Mbps
	CCK	5.5/11 Mbps
<b>OFDM</b>	BPSK	6/9 Mbps
	QPSK	12/18 Mbps
	16-QAM	24/36 Mbps
	64-QAM	48/54 Mbps

## WLAN Components



### Basic Service Area (BSA)

The physical area covered by the wireless signal of a BSS

### Basic Service Set (BSS)

A set of stations and/or access points which can directly communicate via a wireless medium

### Distribution System (DS)

The wired infrastructure connecting multiple BSSs to form an ESS

### Extended Service Set (ESS)

A set of multiple BSSs connected by a DS which appear to wireless stations as a single BSS

### Independent BSS (IBSS)

An isolated BSS with no connection to a DS; an *ad hoc* WLAN

## Measuring RF Signal Strength

### Decibel (dB)

An expression of signal strength as compared to a reference signal; calculated as  $10\log_{10}(\text{signal}/\text{reference})$

**dBm** · Signal strength compared to a 1 milliwatt signal

**dBw** · Signal strength compared to a 1 watt signal

**dBi** · Compares forward antenna gain to that of an isotropic antenna

## Terminology

### Basic Service Set Identifier (BSSID)

A MAC address which serves to uniquely identify a BSS

### Service Set Identifier (SSID)

A human-friendly text string which identifies a BSS; 1-32 characters

### Carrier Sense Multiple Access/Collision Avoidance (CSMA/CA)

The mechanism which facilitates efficient communication across a shared wireless medium (provided by DCF or PCF)

### Effective Isotropic Radiated Power (EIRP)

Net signal strength (transmitter power + antenna gain - cable loss)