



## Agenda

**A. WiFi Technology**

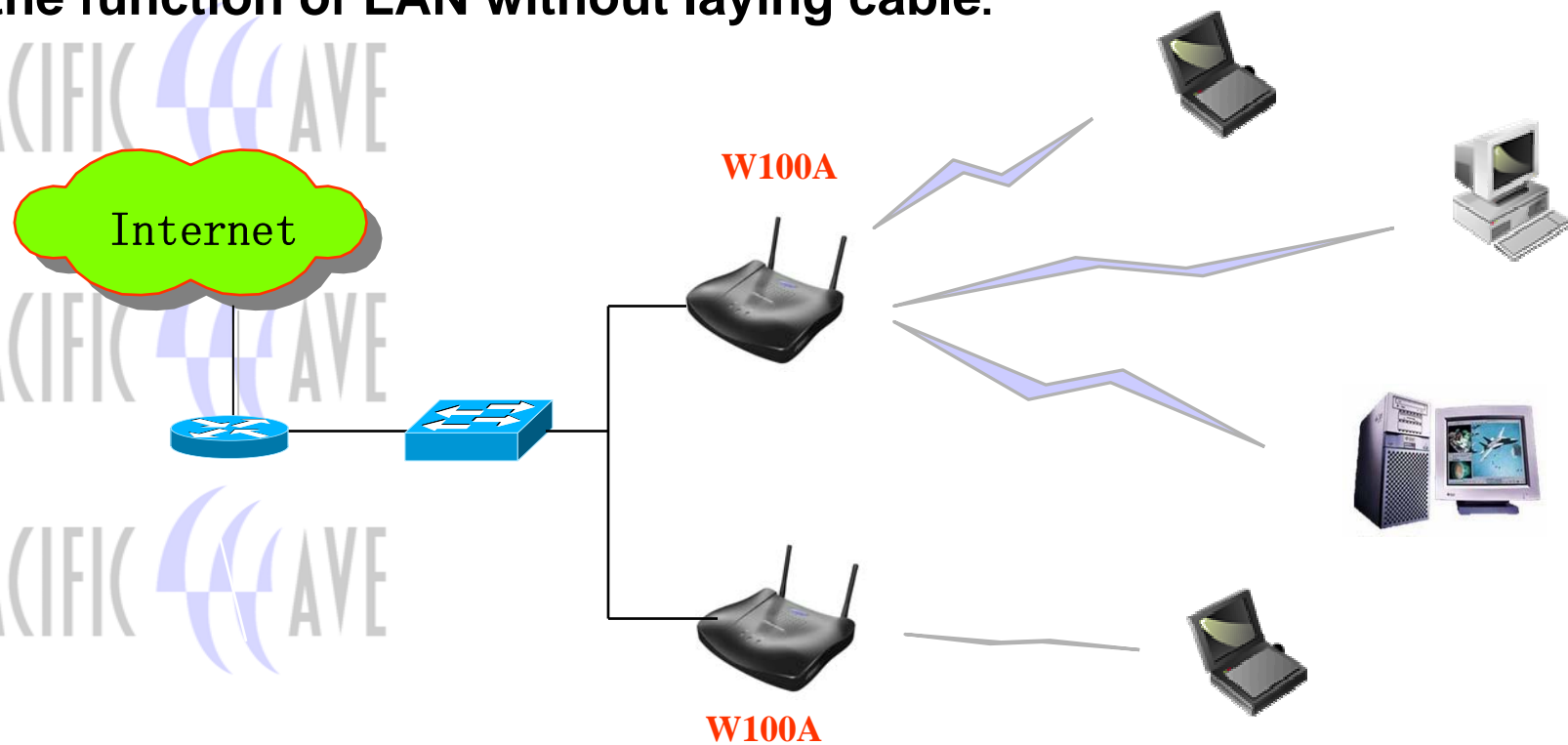
**B. RF Component in WiFi Application**

**C. WiFi Combining Methodology**

**D. WiFi Application**

## A. WLAN or WiFi Technology

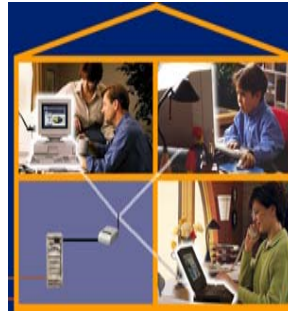
- As the product of the combination of compute network and wireless communication, WLAN can fulfill almost all the function of LAN without laying cable.



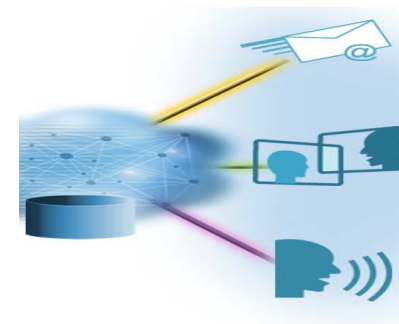
## Development of WiFi



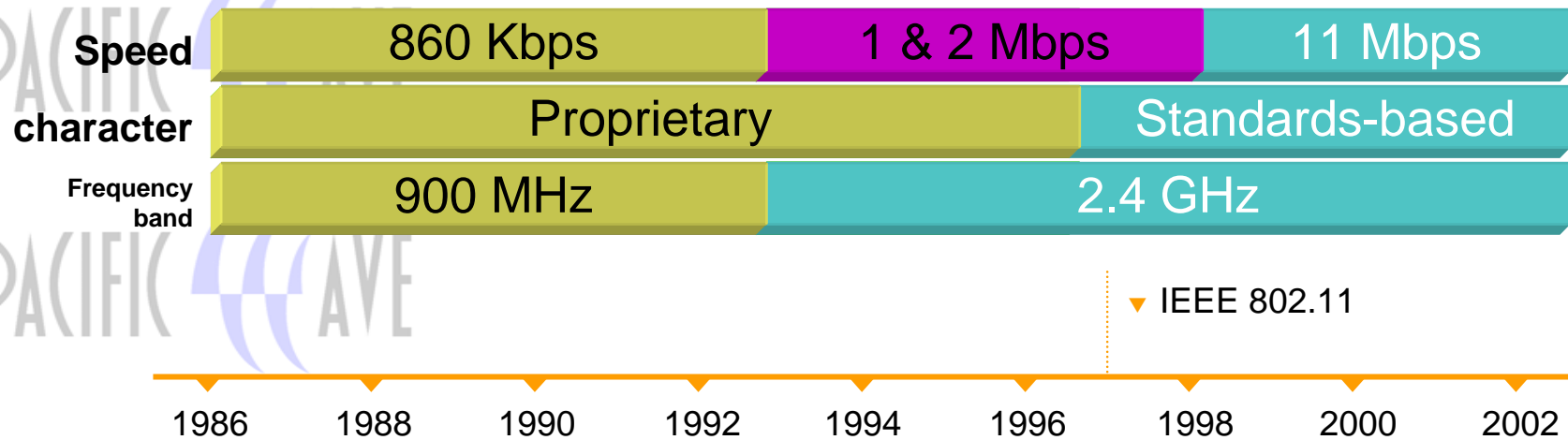
- Small-medium business application
- SOHO



- Connection of home network



- Internet broadband access

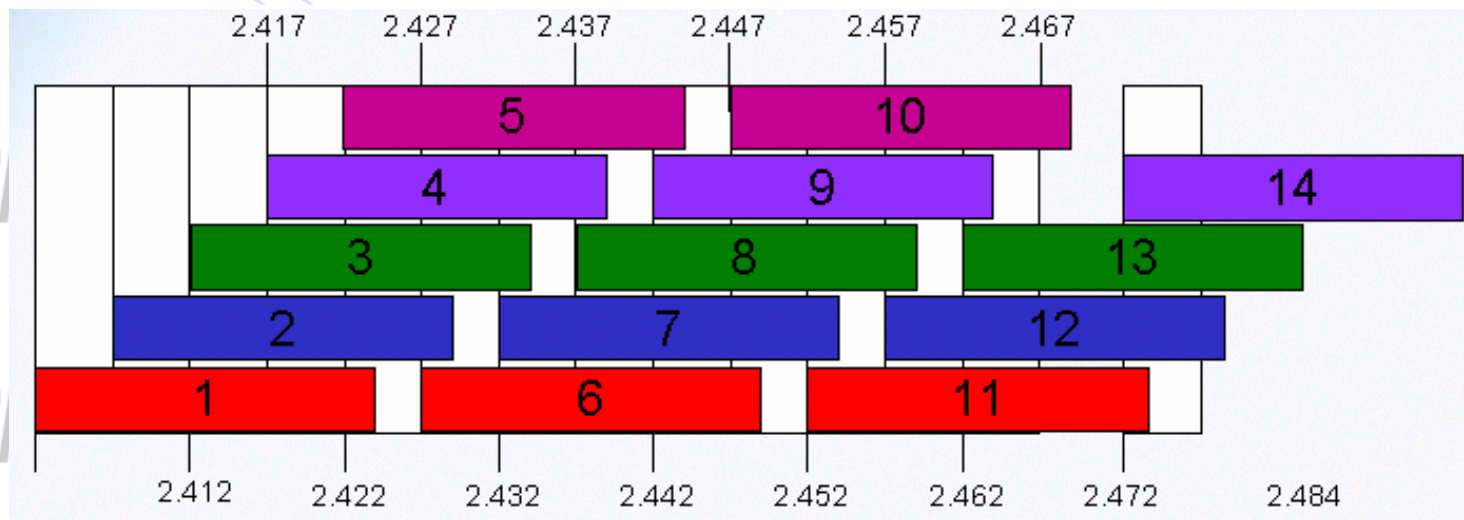


## Comparison of WLAN standard

| Items                               | 802.11        | 802.11b                | 802.11a                | 802.11g                | BlueTooth     | HomeRF                    | HiperLAN               |
|-------------------------------------|---------------|------------------------|------------------------|------------------------|---------------|---------------------------|------------------------|
| Working frequency                   | 2.4G          | 2.4G                   | 5G                     | 2.4G                   | 2.4G          | 2.4G                      | 5G                     |
| Maximum bandwidth                   | 2M            | 11M                    | 54M                    | 54M                    | 1M            | 1~2M/<br>extend to<br>11M | 54M                    |
| Transmission distance               | <300m         | <300m                  | <300m                  | <300m                  | 10~100m       | <100m                     | <100m                  |
| Spread spectrum/<br>modulation mode | DSSS/<br>FH   | DSSS<br>(PBCC<br>/CCK) | OFDM                   | OFDM/<br>PBCC<br>/CCK  | FH            | FH                        | OFDM                   |
| Service types                       | Voice<br>data | Voice<br>data<br>video | Voice<br>data<br>video | Voice<br>data<br>video | Voice<br>data | Voice<br>data             | Voice<br>data<br>video |

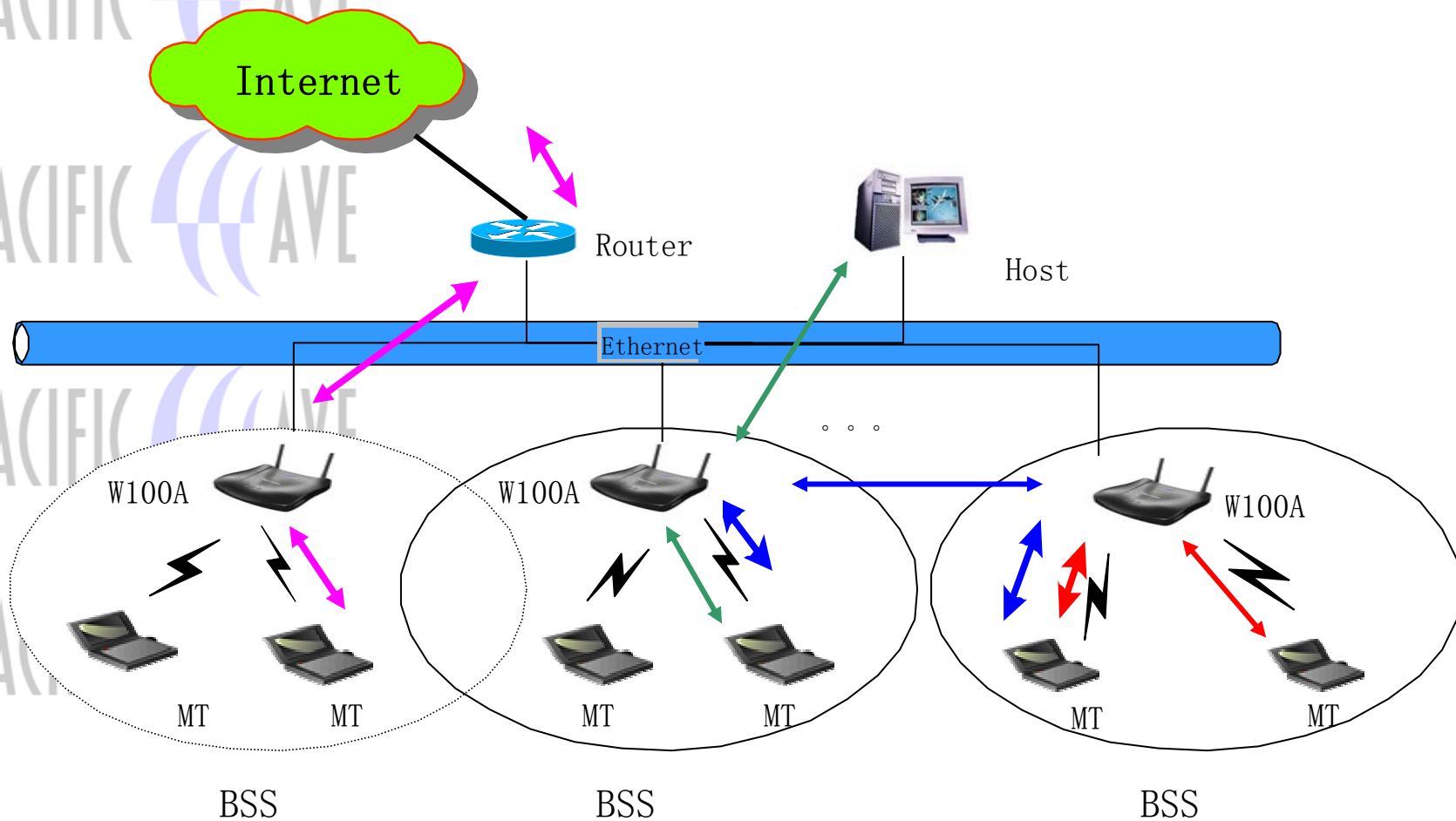
## Standard- - 802.11b

Nowadays, 802.11b standard is widely applied and its operating frequency is 2400-2483.5MHz, the bandwidth of this frequency is 83.5MHz and it always be divided into 14 sub-channels, and the bandwidth of each sub-channels is 22MHz, the assignment of sub channels is showed as following:

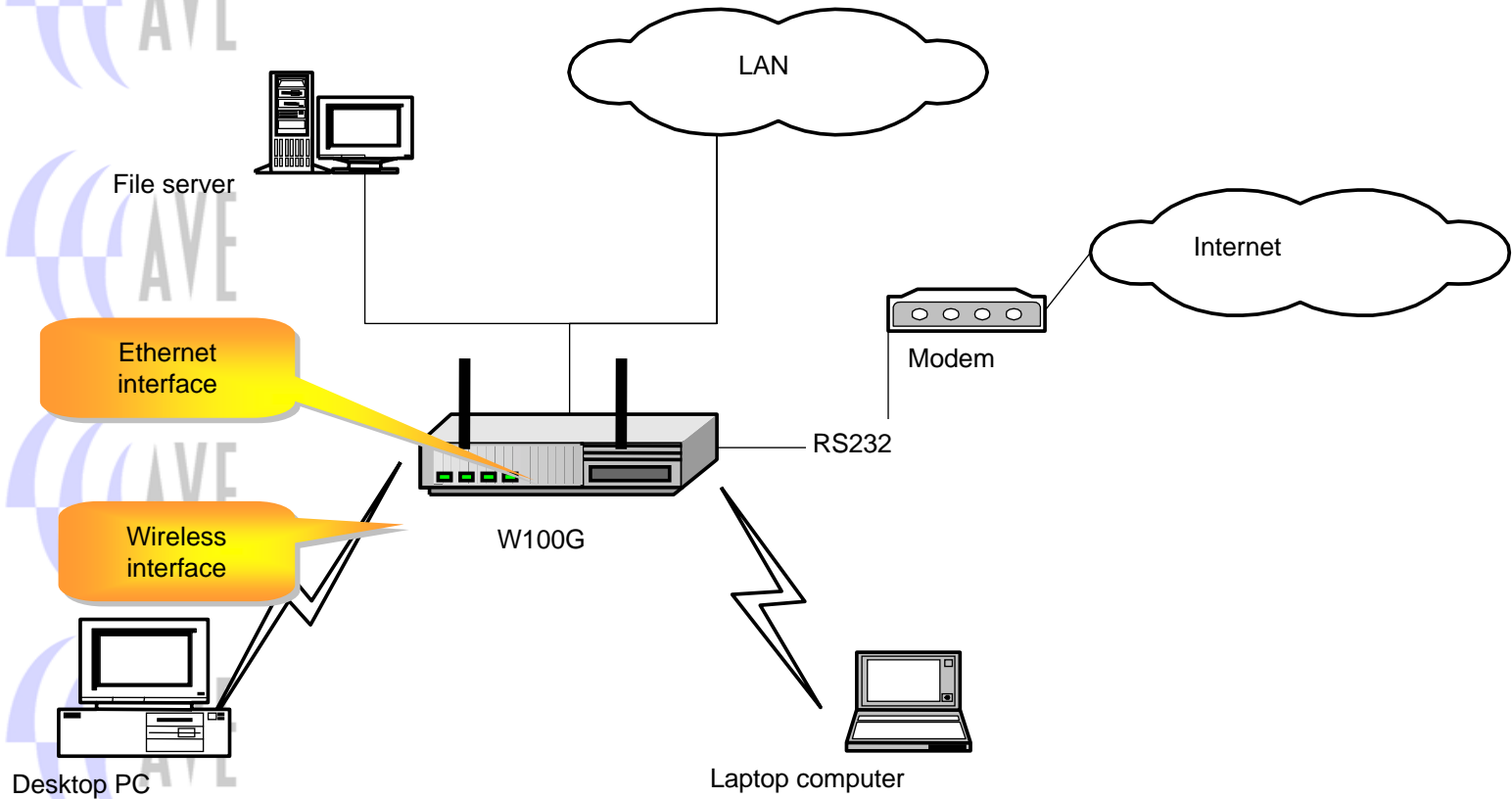


Multi-AP mode

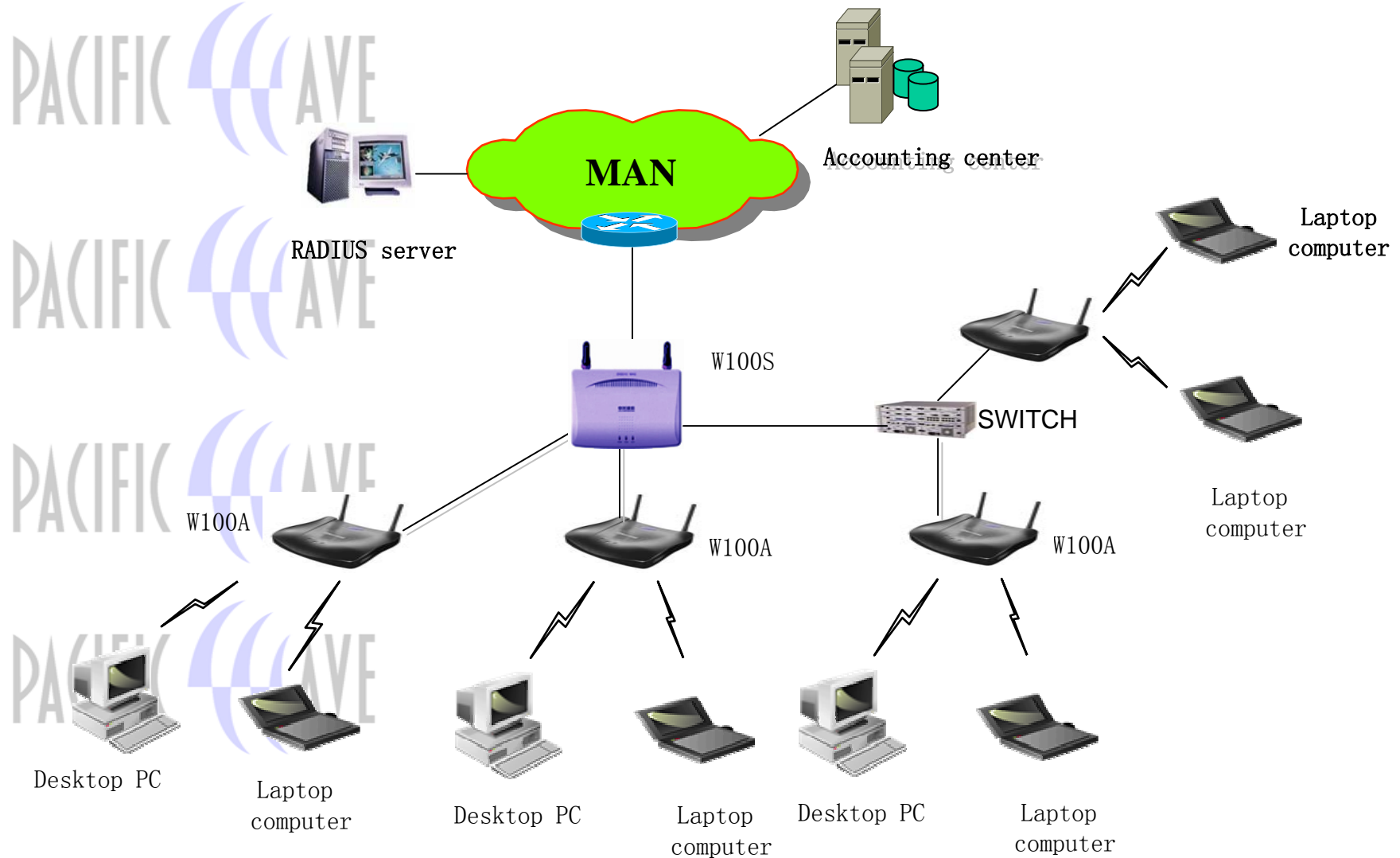
Networking of WiFi



# Application networking of Wireless Gateway

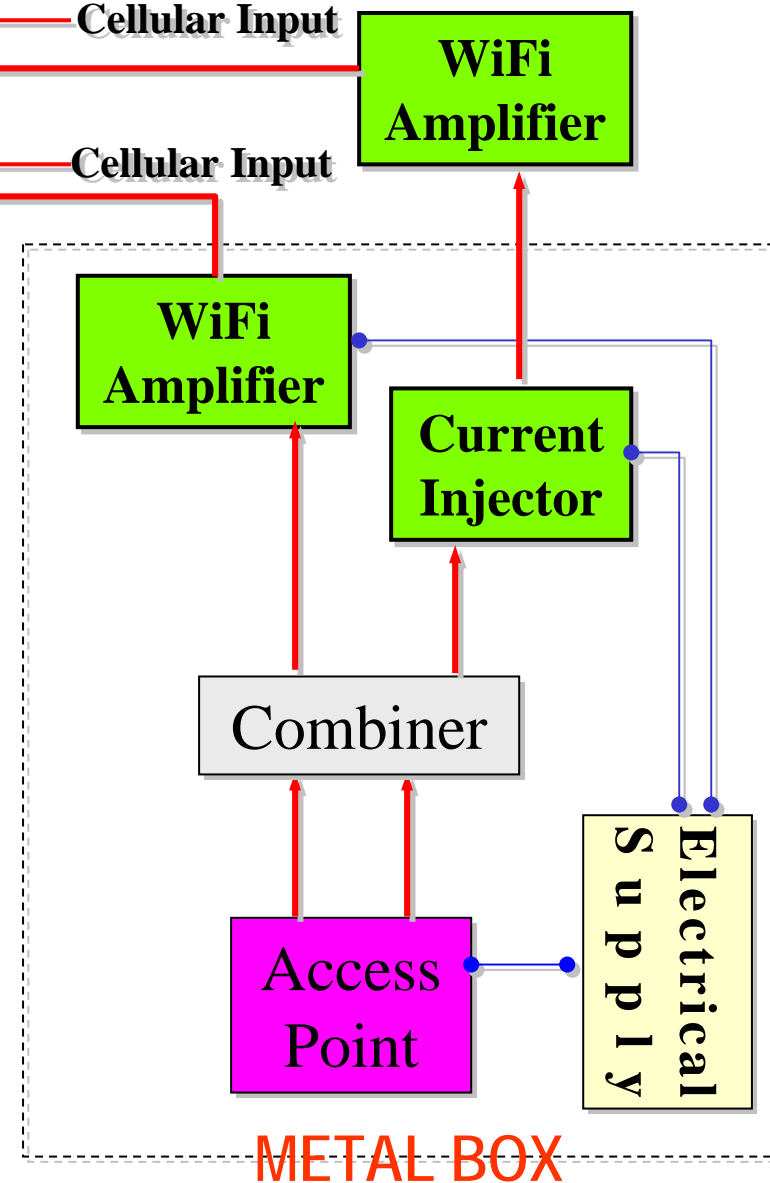
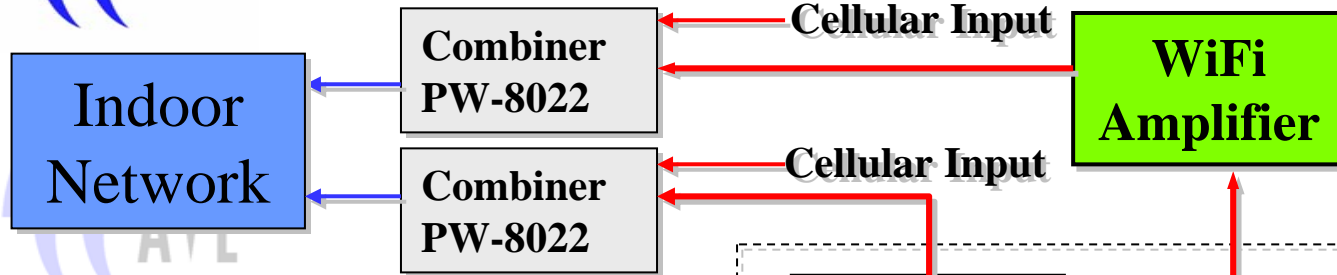


## Basic networking of Wireless Access Server





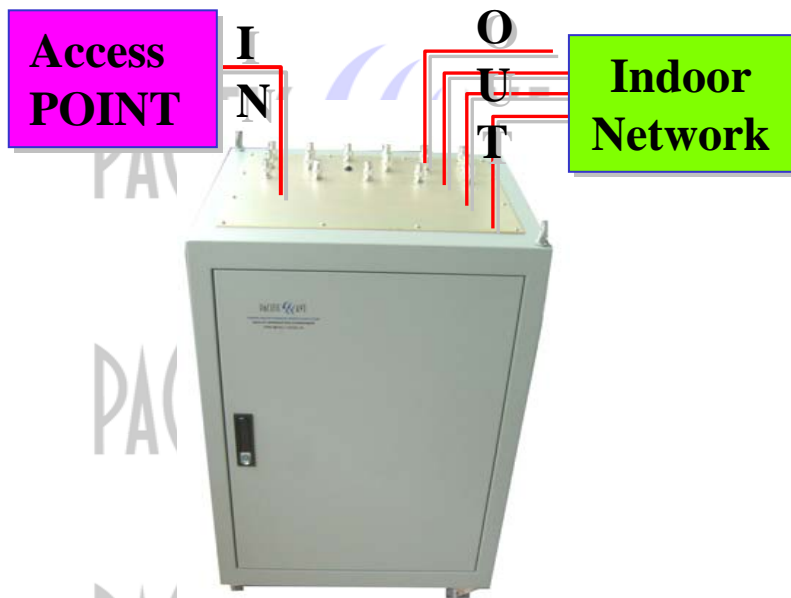
## B. RF Component in WiFi Application



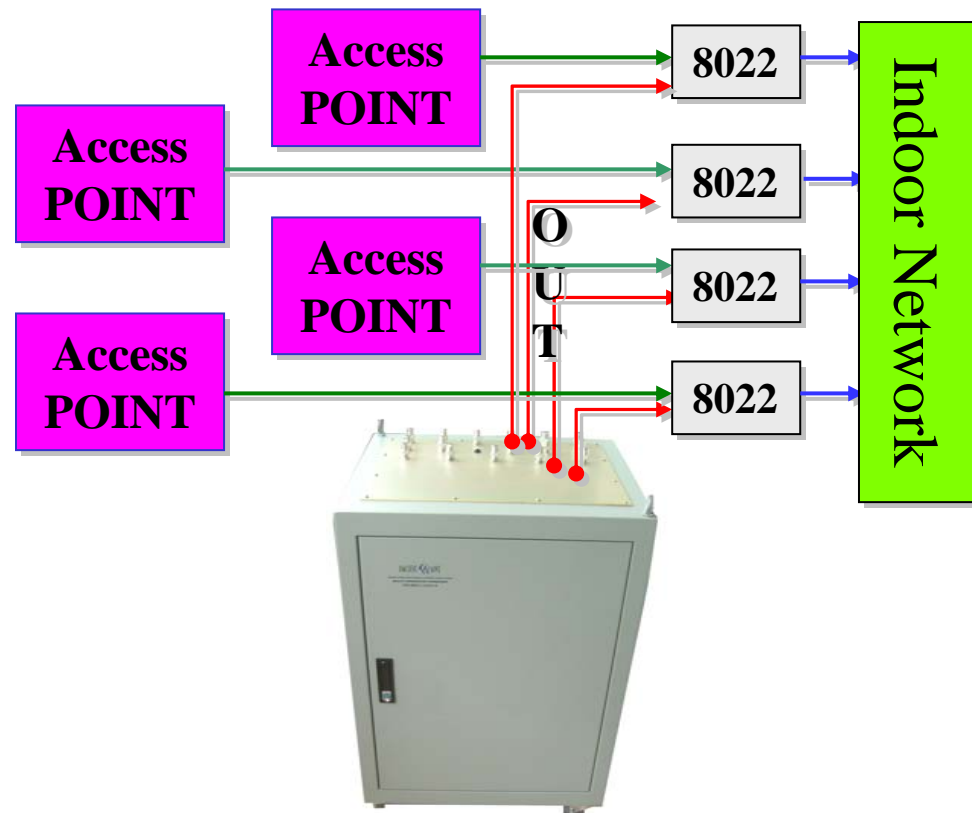
# C. WiFi Combining Methodology :

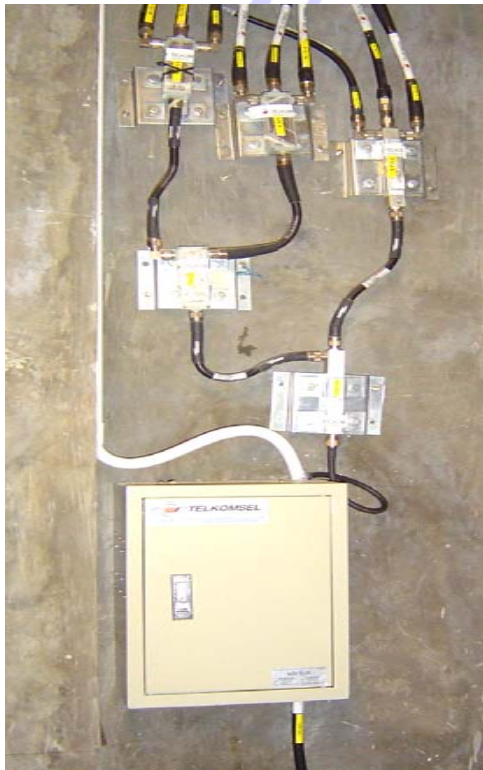
## 1. Centralize at Multi Operator Combiner

*a. Build in WiFi Combiner:  
Part Code: PW-MOC-16in4out*



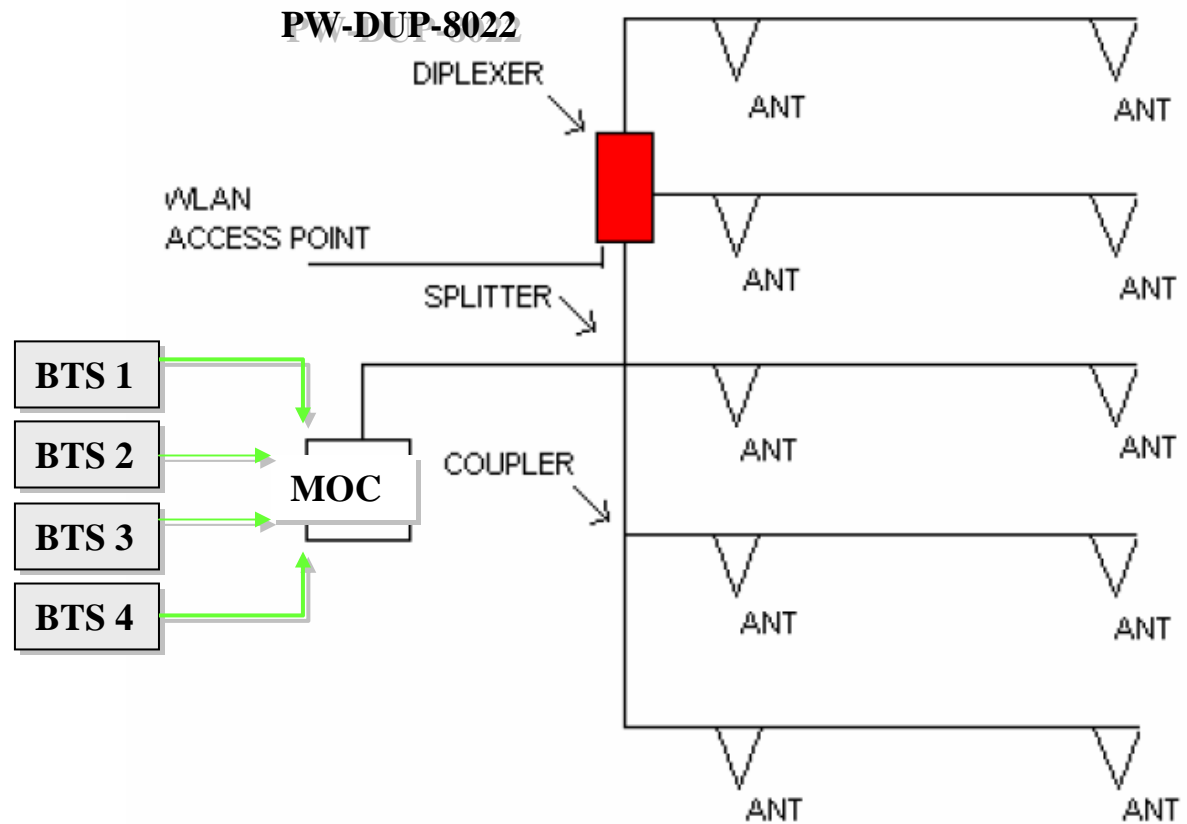
*b. Use External Combiner :  
Part Code: PW-DUP-8022*





# WiFi Combining Methodology :

## 2. Combined at Multi Location / Hot Spot



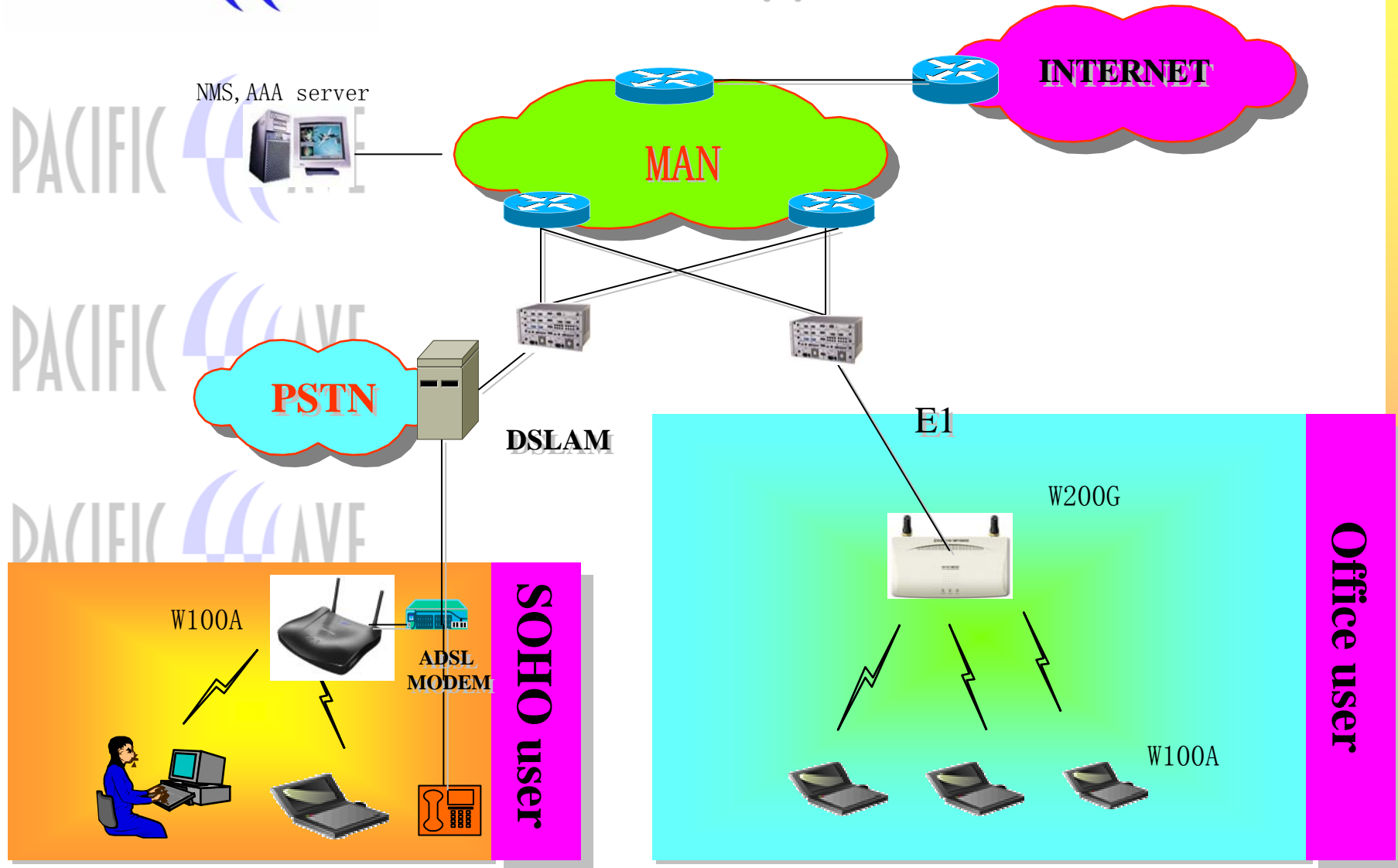


## Comparison Table between Centralized & Multi Spot

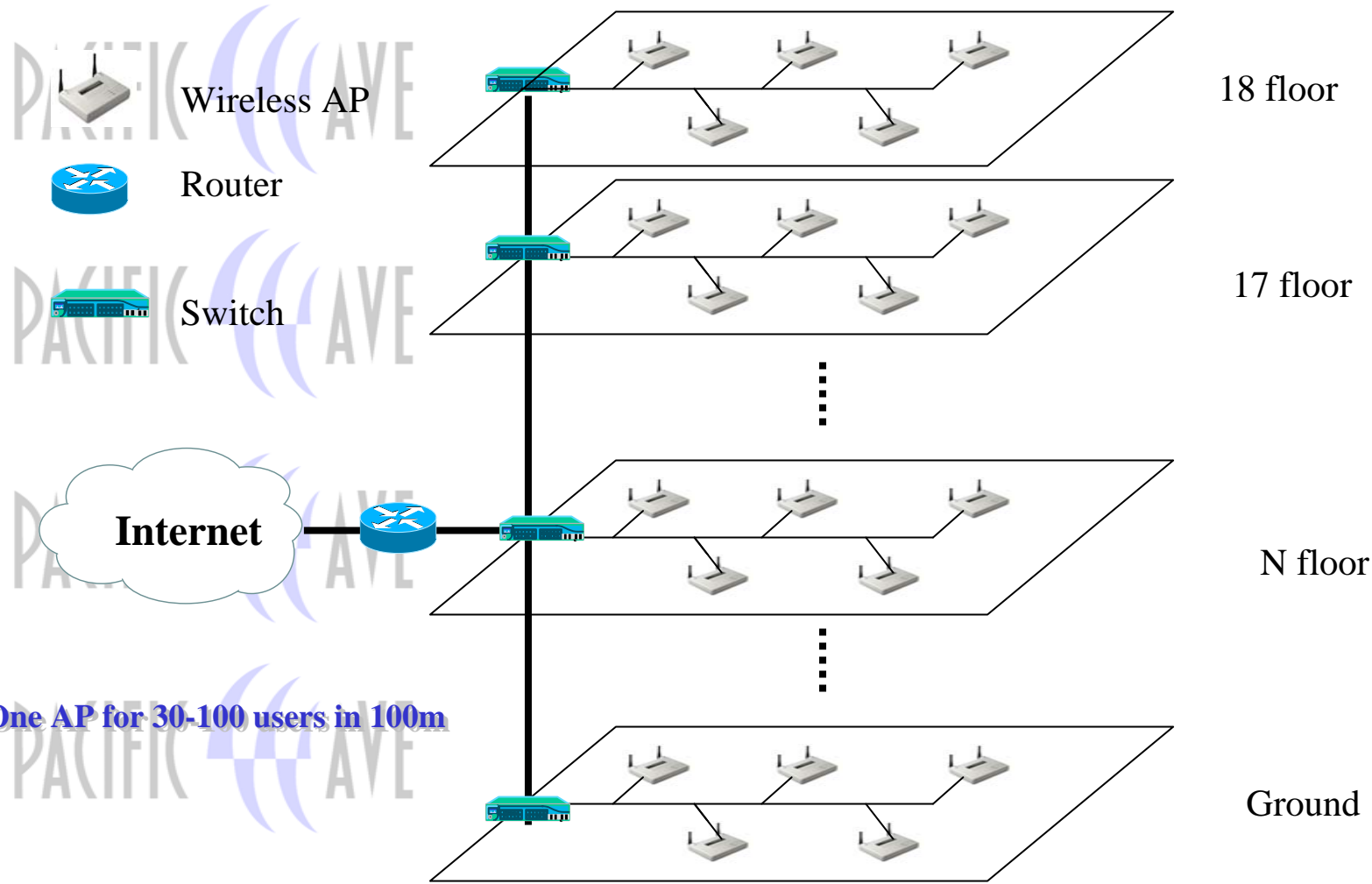
| ASPECT OF CONSIDERATION  | Centralized at Multi-Operator Combiner   | Combined at Multi Location/Hot Spot  |
|--------------------------|--|--|
| COVERAGE OF WiFi 2400Mhz | <i>All Location connected to DAS will be covered by WiFi</i>                             | <i>Only Area needs WiFi coverage will be connected to Access Point</i>                 |
| NETWORK MAINTENANCE      | <i>Easy to handle : because its centralized</i>  | <i>More Effort needed to handle several Access Point</i>                               |
| NUMBER OF USER SERVED    | <i>Limited to Ability of Access Point installed at Combiner</i>                          | <i>Flexible to grow because number of Access Point can be added</i>                    |
| INTEFERENCE ISSUE        | <i>FRAGILE : If Access Point has interference problem, whole coverage is interrupted</i> | <i>If one Access Point have interference problem, other Access Point still survive</i> |
| COST OF INVESTMENT       | <i>High Power Amplifier needed at MOC is quite expensive</i>                             | <i>Medium Power of Amplifier (1-4 watt) is less expensive</i>                          |



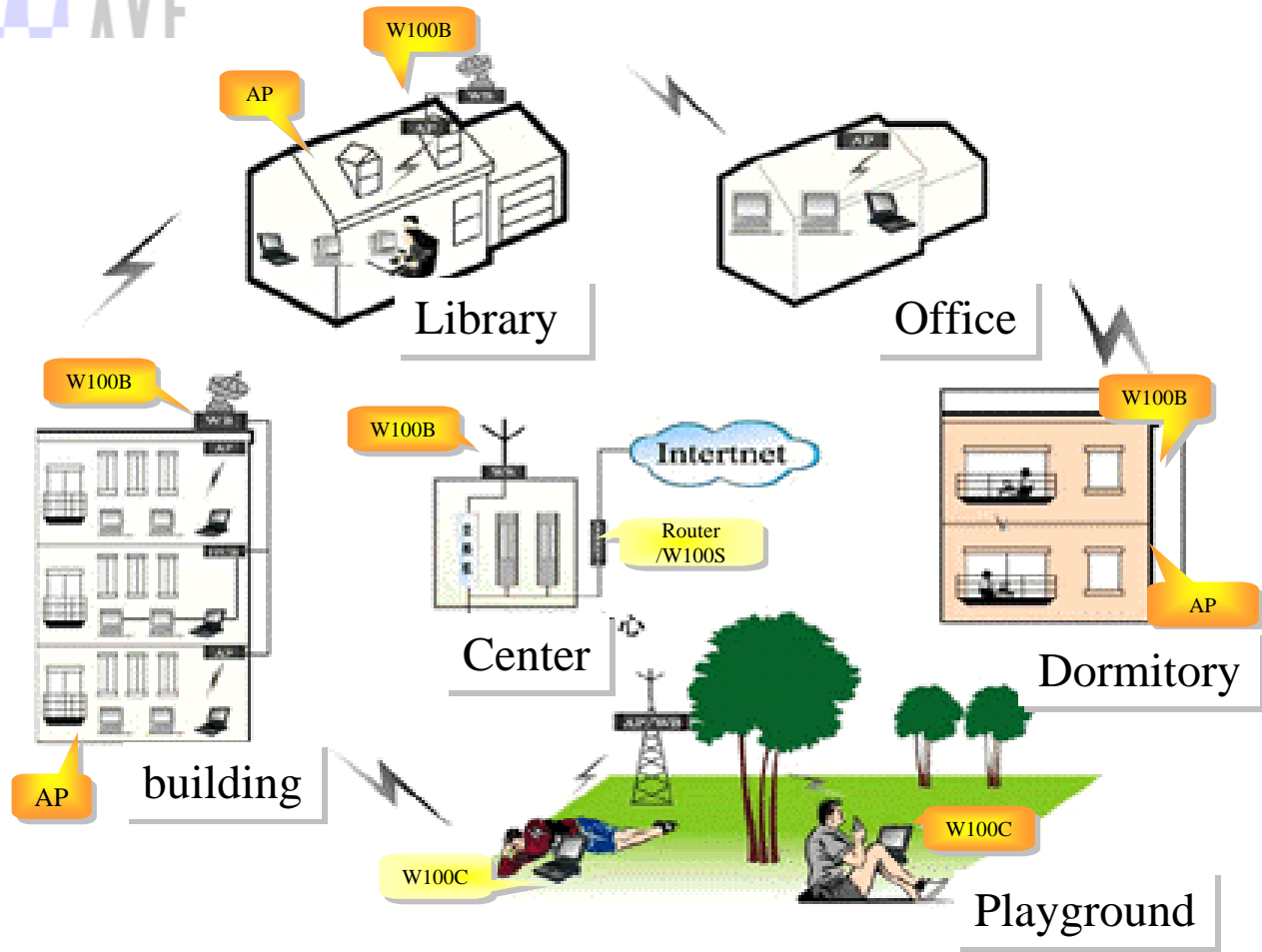
## D. WiFi Application



## Solution for medium office



## WLAN solution for large scale network-campus network



## WLAN solution for public

