Alcatel·Lucent Enterprise

Wireless WiFi 6
(802.11ax)

Wi-Fi lahendused

November 5

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Wireless WiFi 6

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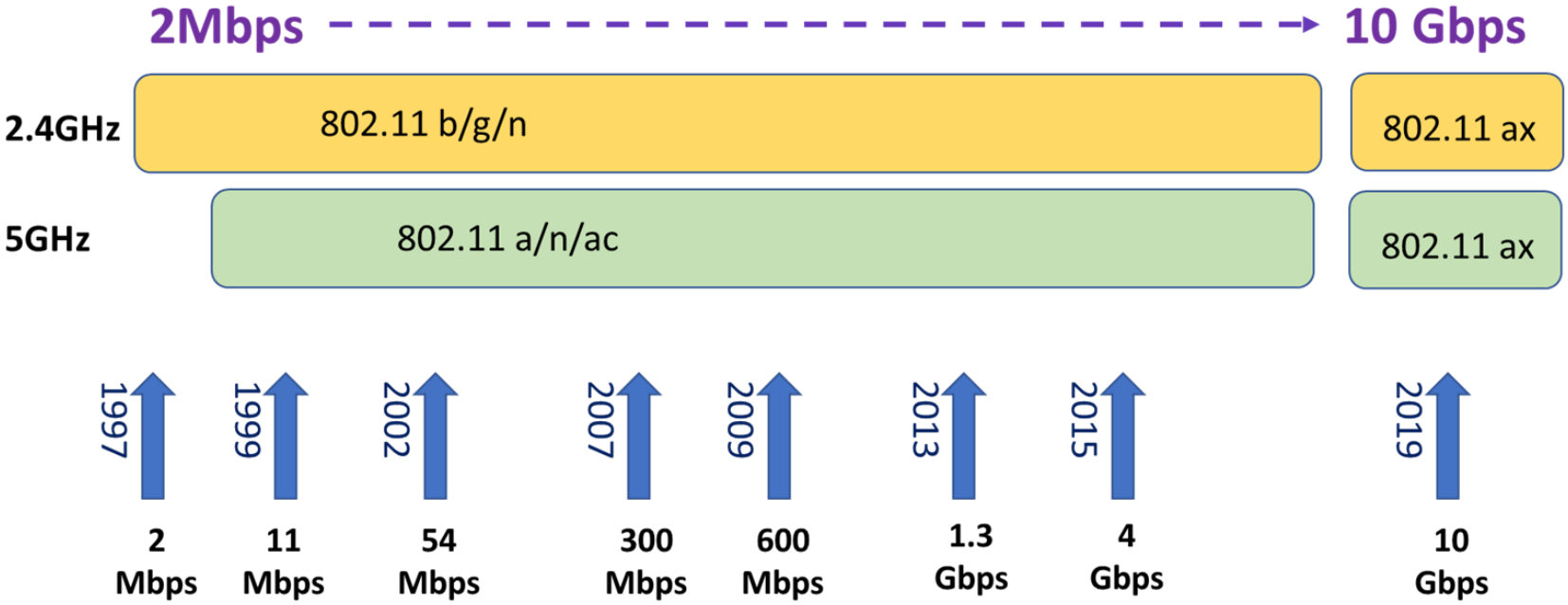
802.11ax : Wi-Fi Technology Evolution

22 YRs Airtime & Growing

AWOS 4.0.R1



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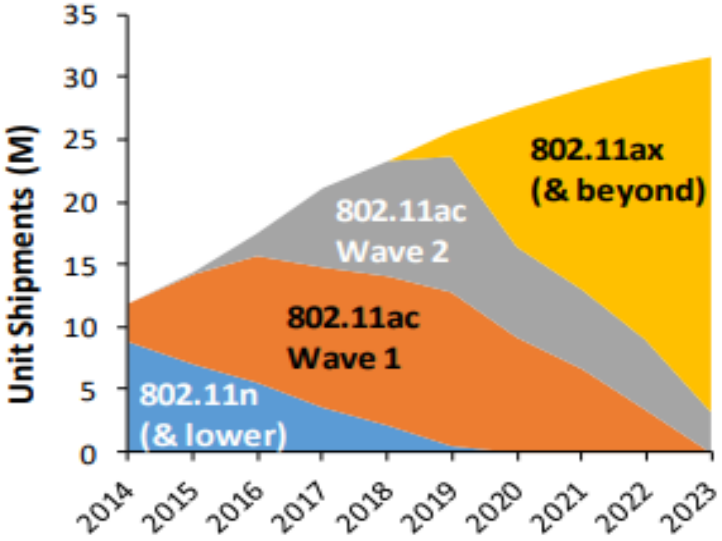
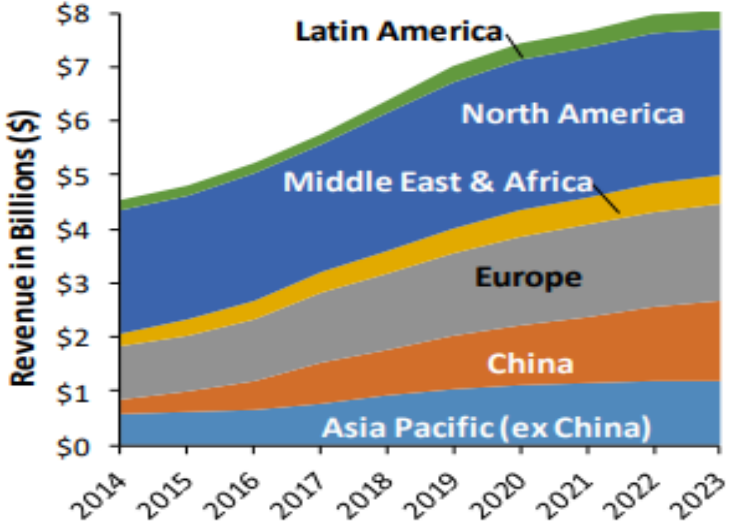
Next 5YRs WLAN Market Forecast

Enterprise WLAN Unit Shipments Forecast



Enterprise WLAN Regional Forecast



- We expect that by end of year 2019, most Enterprise class vendors will begin shipping 802.11ax Access
- We expect that 802.11ax will become the dominant technology in the coming years

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WI-FI 6 – NEW STANDARD

- **802.11ax: n**ew Wi-Fi standard for a new generation of wireless network
- Wi-Fi Alliance name: **Wi-Fi 6**
- Developed to **improve user experience in dense environments** & face networking wireless connectivity challenges
  - IoT explosion
  - Support application with less latency
  - Additional battery life
  - Bandwidth hungry applications (real time and audio/video)
- Face common wireless connectivity problems and improve **Efficiency**
- From a network standpoint the technology will be enabled by the hardware of the **next generation Wi-Fi access points**
- From a **client** standpoint it is gradually been embedded into mobile devices such as smartphone, laptops and IoTs

Generation of network connection	Sample user interface visual
Wi-Fi 6 (802.11ax)	
Wi-Fi 5 (802.11ac)	
Wi-Fi 4 (802.11b/g/n)	

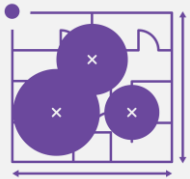
WI-FI 6 AT A GLANCE

Enabling a new mobile experience

Increased throughout in **high-density environment**

Enhanced connection **stability & reliability**

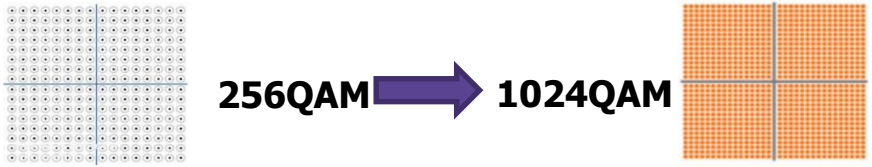
Extended Battery life connected devices



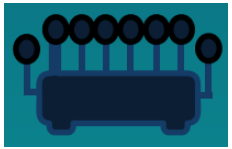
Improved **Wi—Fi coverage**

Wi-Fi 6 Feature Benefits

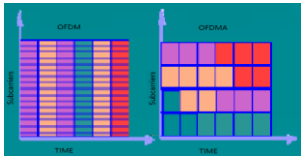
1024QAM
- 25% higher rates
- Gigabit Wi-Fi with 2x2 11ax



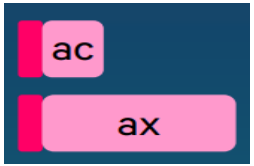
Up to **8x8 Radio**
- High capacity 8ss SU/MU
- High-precision Beamforming



OFDMA
- Clients occupy different tone-sets
- Small packet efficiency
- Longer range – close the UL imbalance

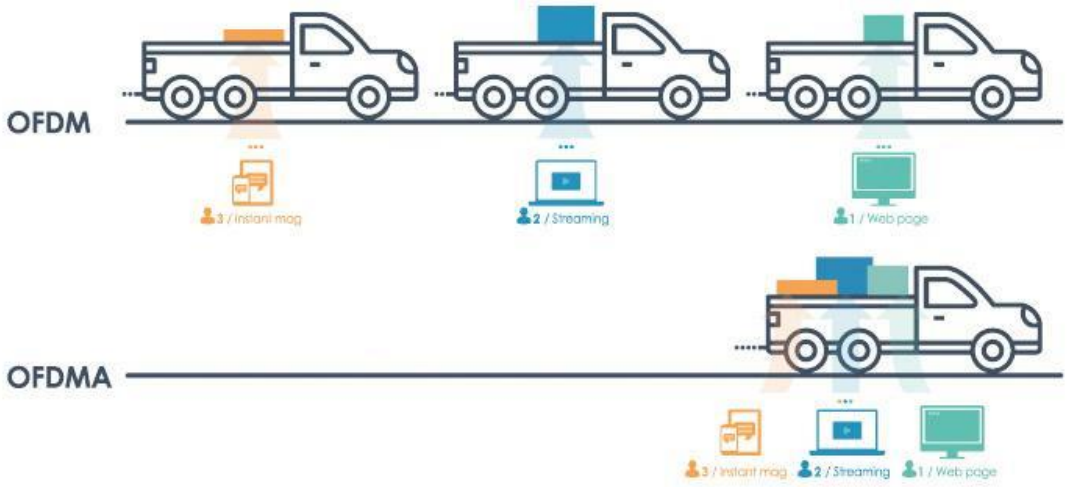


Longer Symbol Duration
- 4x longer OFDM symbol
- Extends Outdoor deployment



802.11ax

OFDMA schedules to reduce payload and latency



802.11ax adopts OFDMA to allows multiple users with varying bandwidth needs to be served simultaneously.
It results in fixed overhead payload size, reduced latency, and increased efficiency.

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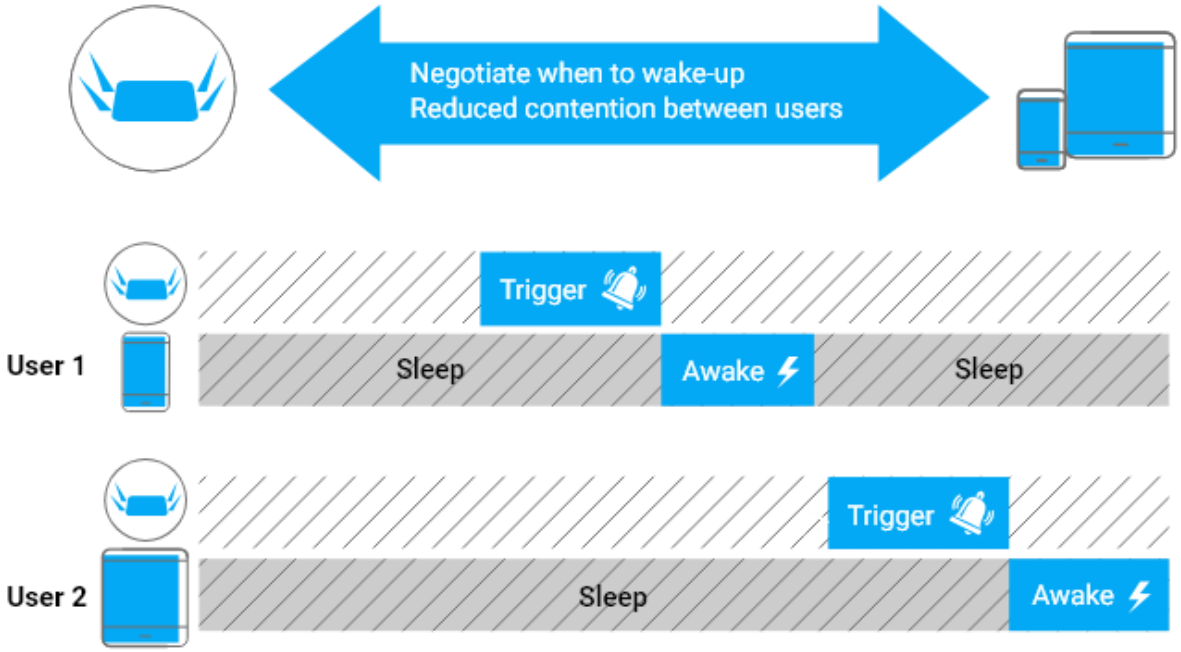
802.11ax
Target Wake Time



The target wake time feature lets your devices to keep a radio receiver sleeping and wake it up as needed to receive periodic transmissions from an access point.
The result is significant power-saving for battery-powered devices.

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WI-FI 6 VS 5G

Wi-Fi 6: THE DE-FACTO WIRELESS CONNECTIVITY FOR ENTERPRISES

- ✗ 5G is a carrier technology
- ✗ 5G needs to rely on Service Provider to manage your network
- ✗ 5G leverages frequencies that will not easily travel through obstacles and inside buildings
- ✗ 5G deployment is slow and costly
- ✗ 5G will take 3-4 years to be widely adopted
- ✗ Very few devices available

- ✓ Wi-Fi 6 is available for customers and enterprises
- ✓ You can setup all the rules you want on your network for your users
- ✓ Wi-Fi 6 leverages 2.4 and 5 GHz ideal for indoor use
- ✓ Wi-Fi 6 is available at an affordable price
- ✓ Wi-Fi 6 is backward compatible with older devices
- ✓ A lot of devices already integrate it


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Wi-Fi lahendused
1949
1939
1929
1919
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OmniAccess® STELLAR WLAN

Hospitality
AP1201H

Entry-range
AP1201

Emerging/SMB
AP1101

High-range
AP1231
AP1232

Mid-range
AP1221
AP1222

Outdoor
AP1251

Distributed intelligence architecture

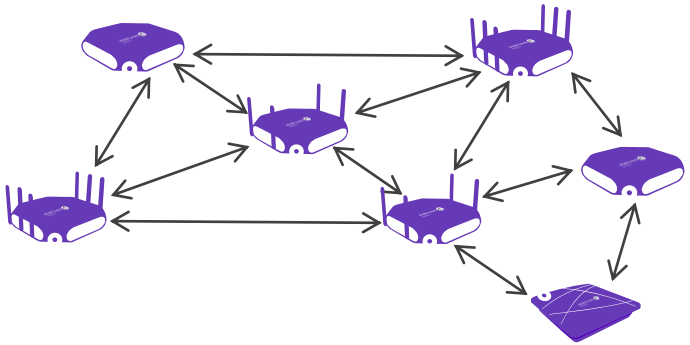
Cloud enabled Unified Management

Designed for **Unified Access**

BYOD

Integrated Guest Management

Wifi Express 16→32→64→256 cluster size



- Expand up to 256 APs in a Single Managed Cluster
  - Minimum of 8 QTY of AP122x or AP123x or AP1251 required
  - Guest Account Limit - 2K
  - Connected Client Limit – 4K

✓ Low or No Touch IT

- 3 stars Hotels
- Assisted Living Spaces
- Small schools

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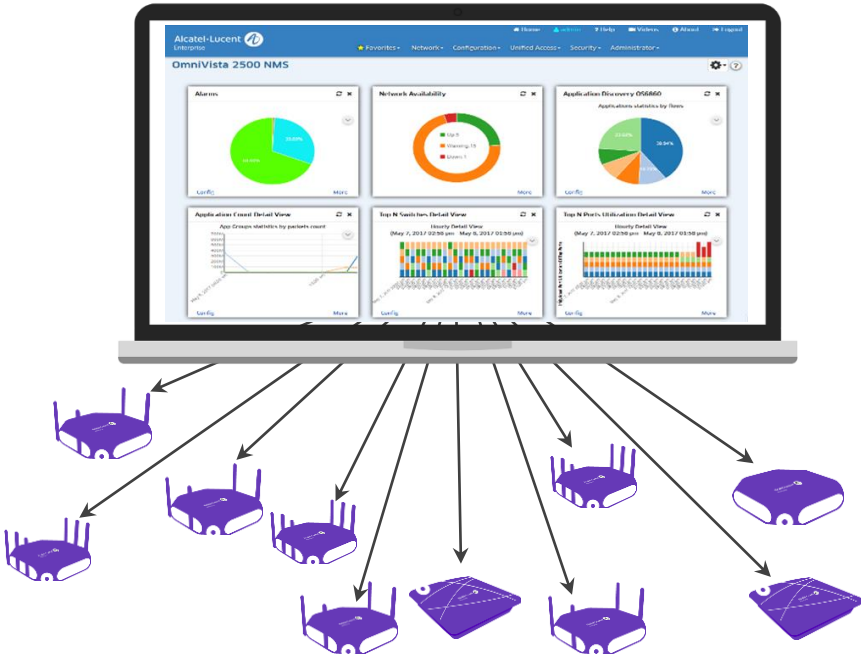
WiFi Enterprise - Central managed deployment

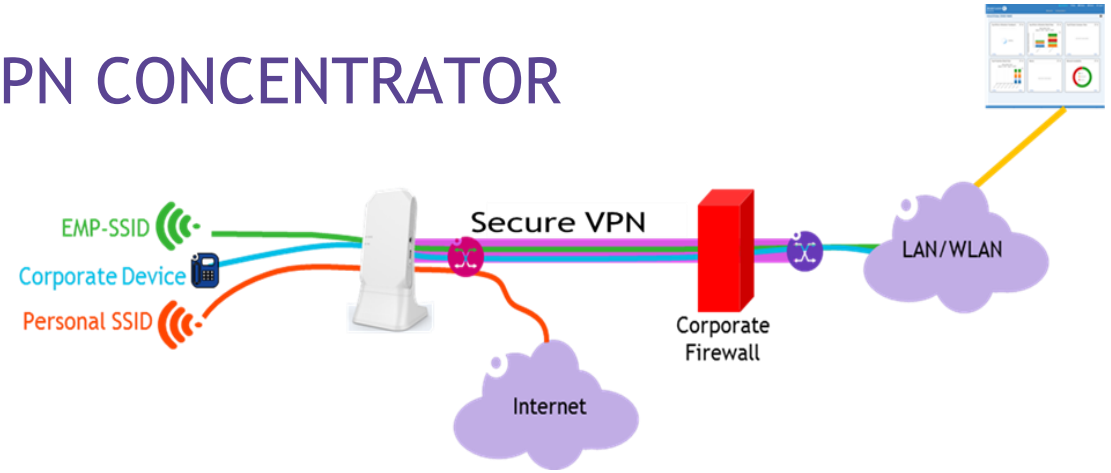


- Local or Cloud
- Unified wired-wireless
- Access Management (Guest/BYOD)
- Role based policy enforcement
- Smart Analytics
- Distributed intelligence control
  - Up to 4000 APs
- Advanced wireless features
  - WLAN topology on a map and heat map
  - Wireless security (wIDS/wIPS)
- High availability

Central unified management for larger deployments

RAP & STELLAR VPN CONCENTRATOR

**AWOS 3.0.R7*
Q3 2019**



- RAP solution for remote home users and remote offices providing secure access to corporate applications
  - RAP requires no unpacking and configuration by IT in corporate. Default factory shipped Stellar AP is capable of being deployed as RAP
- On Premise Stellar Wireless traffic can be securely tunneled to the concentrator
  - Enabling secure overlay transport
  - Enabling low touch Stellar deployment on non ALE LAN infrastructure
- Remote Traffic steering capabilities
  - Layer 2 connectivity between clients and HQ network, clients get the same VLAN/Role/IP address from HQ network just like inside HQ Network. No local breakout.
  - Layer 3 connectivity between clients and HQ networks, AP will act as the first gateway of clients. Local breakout supported to access local printer or direct Internet access.
  - Local Layer 2 network ONLY including access to Internet

**RAP Available in POC mode*

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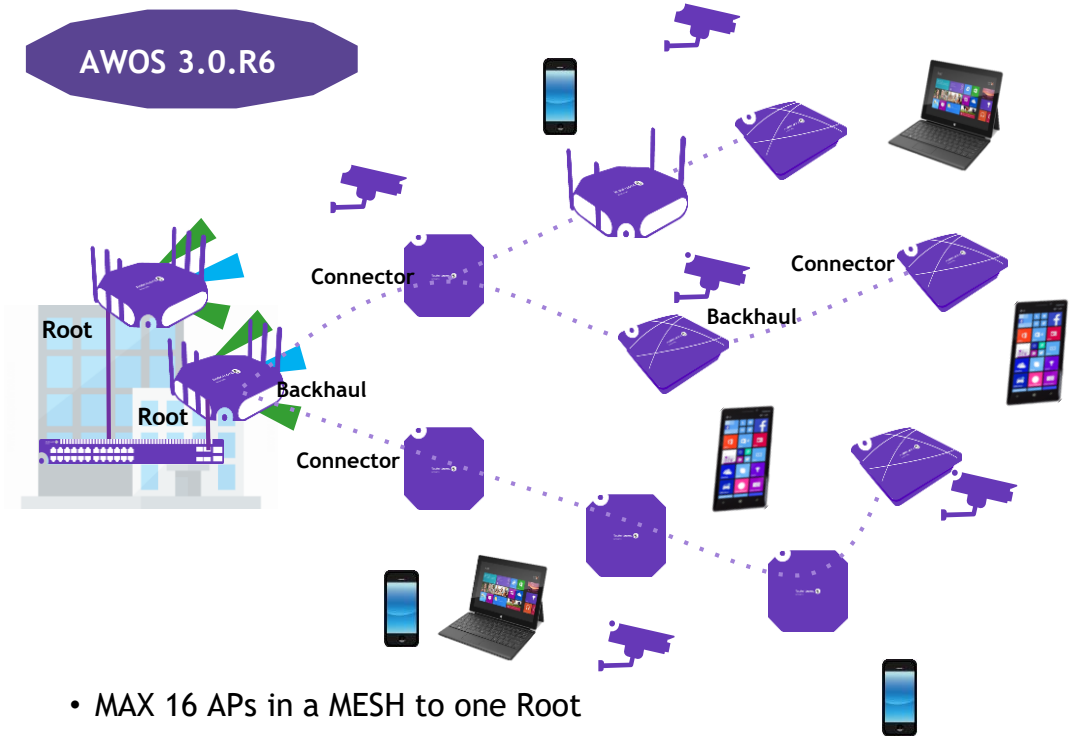
Wireless MESH – Flexible Deployments



- MAX 16 APs in a MESH to one Root
- MAX 5 APs in any P2MP connection
- MAX 4 Hops

- The LAN/WAN connected AP is the Root
- All APs also broadcast client WLAN services (max 5)
- If there are two roots configured in the setup, the downlink APs will connect to the root with BEST RSSI
- IF Root fails the downlink APs will try to search for next best Root
- Recommend 5GHz MESH link

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OmniAccess® Stellar WLAN Access Point Lineup

AWOS 3.0.R6

AP1101
802.11ac Wave 1
2 radios
2×2:2 @ 2.4GHz
2x2:2 @ 5GHz
1 GE port

AP1201
802.11ac Wave 2
2 radios
2×2:2 @ 2.4GHz
2x2:2 @ 5GHz
BLE, Zigbee
1 GE port
DPI

AP1221/AP1222
802.11ac Wave 2
2 radios
2×2:2 @ 2.4GHz
4×4:4 @ 5GHz
BLE w/USB
1 GE Port
DPI

AP1231/AP1232
802.11ac Wave 2
3 radios
4×4:4 @ 2.4GHz
Dual 4×4:4 @ 5GHz
BLE
1xGbE + 1x2.5GbE
DPI

AP1251
802.11ac Wave 2
2 radios
2×2:2 @ 2.4GHz
2×2:2 @ 5GHz
1 GE port uplink
1x GE downlink
DPI

AP1201H
802.11ac Wave 2
2 radios
2×2:2 @ 2.4GHz
2x2:2 @ 5GHz
BLE w/USB
1 GE port
3x GE downlink
RJ45 Passthrough

Special Use
Hotel Rooms
Education Dorms
Patient care rooms
Remote Office
Etc.

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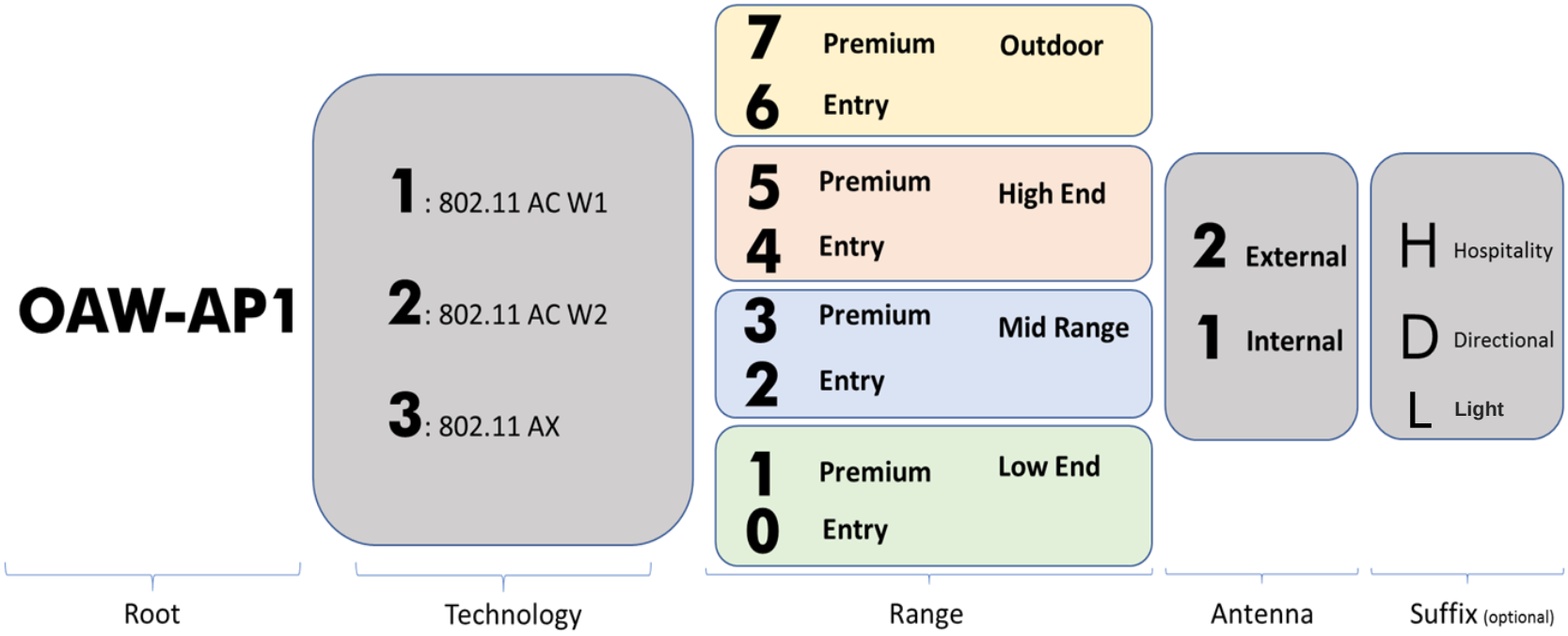
OmniAccess Stellar AP Nomenclature

OAW-AP1XXXx



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Datasheets

Management Platform
- OmniVista 2500 datasheet
- OmniVista Cirrus datasheet

LAN Switches
- OmniSwitch 2200 SMB WebSmart switch: datasheet
- OmniSwitch 6350 SMB LAN switch: datasheet
- OmniSwitch 6450 Stackable Gigabit Ethernet LAN switch: general datasheet , 10 port datasheet
- OmniSwitch 6465 Hardened L2+ LAN Switch datasheet
- OmniSwitch 6560 – Stackable Multigig LAN switch: datasheet
- OmniSwitch 6860 – Stackable LAN switch with multigig and DPI option datasheet
- OmniSwitch 6865 – Hardened L3 Switch datasheet
- OmniSwitch 6900 – Stackable 40G core switch datasheet
- OmniSwitch 9900 – Chassis core switch datasheet

Stellar WLAN
- OmniAccess AP1101 SMB 802.11ac AP: datasheet
- OmniAccess AP1201 entry-level 802.11ac Wave 2 AP: datasheet
- OmniAccess Stellar AP1220 Series– High performance wave 2 AP: datasheet
- OmniAccess Stellar AP1230 Series – Ultra high performance wave 2 AP: datasheet
- OmniAccess Stellar AP1251 – Rugged wave 2 AP: datasheet
- OmniAccess Stellar AP1320 Series – High performance WiFi6 AP: datasheet
- OmniAccess Stellar AP1360 Series – Outdoor WiFi6: datasheet

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