Top 6 tips for Wi-Fi design & configuration best practices

Hans Van Ballaer



- Founder of AHFIBIT BV
- External Netwerk consultant
- CWNE #340
- CWNT / Ekahau ECSE Instructor

@hansvanballaer

linkedin.com/in/hans-van-ballaer

https://www.ahfibit.com

6 Tips - Wi-Fi **Design & Config** Best Practices

1

LCMI

Design for the least capable, most important device in mind

Low Rx sensitivity
Worse Tx capabilities

2

SECONDARY COVERAGE

Roaming

Redundancy

Capacity

3

TX POWER RANGE

5 & 6GHz
11-20 dBm (EIRP)

Match transmitting capabilities of a client

Set min/max range of between 11 -20 dBm

4

ANTENNA PATTERN

Check antenna patterns

Pick the right antenna for your use case !

5

AP PLACEMENT

Place the access points where the clients are !

Good RSSI = High SNR = Complex Modulation = High Data Rate

6

RF PROFILE

Provide high data rates

Without having too much channel contention

AIRTIME IS KEY !

AHFIBIT BV

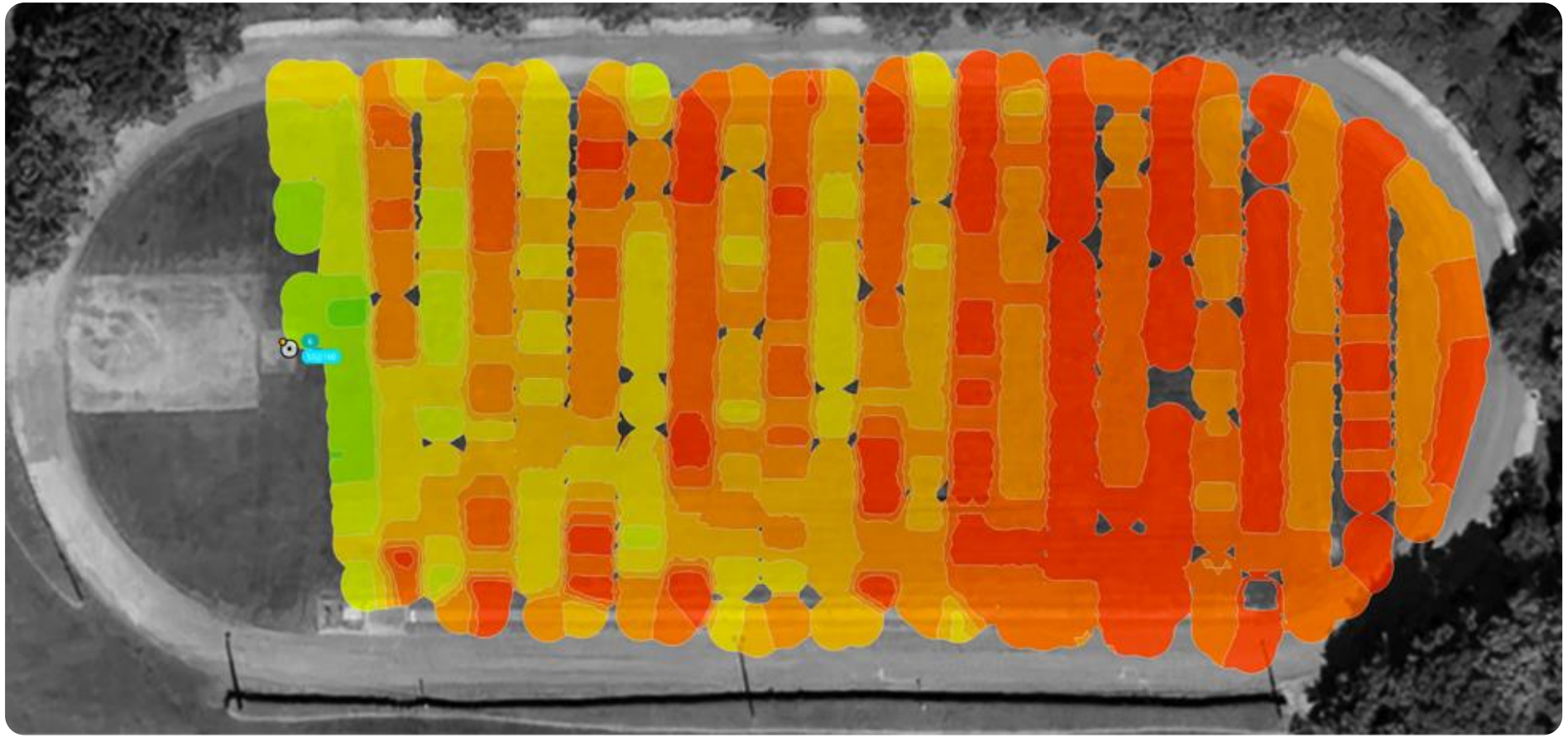
6 Tips - Wi-Fi **Design & Config** Best Practices

1

LCMI

Design for the least capable, most important device in mind

Low Rx sensitivity
Worse Tx capabilities



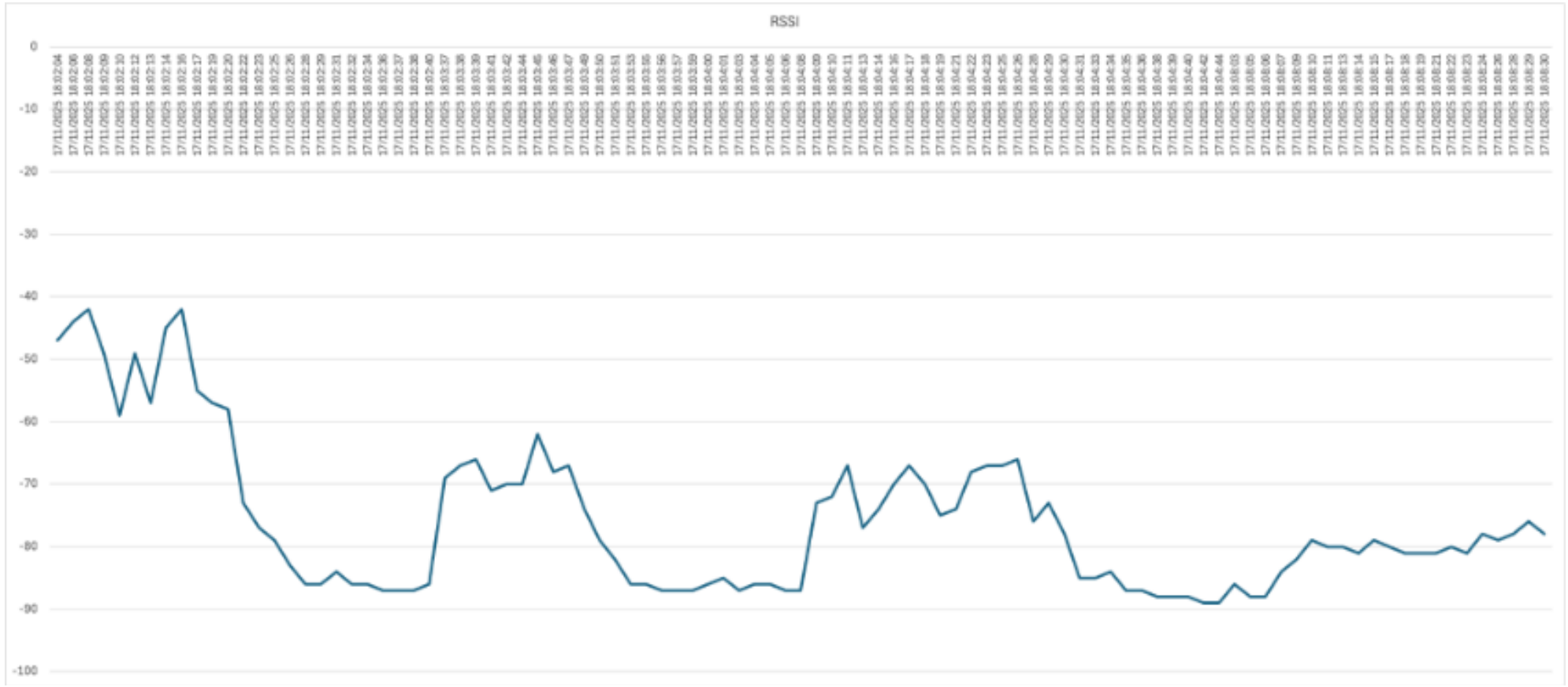
6 Tips - Wi-Fi **Design & Config** Best Practices

1

LCMI

Design for the least capable, most important device in mind

Low Rx sensitivity
Worse Tx capabilities



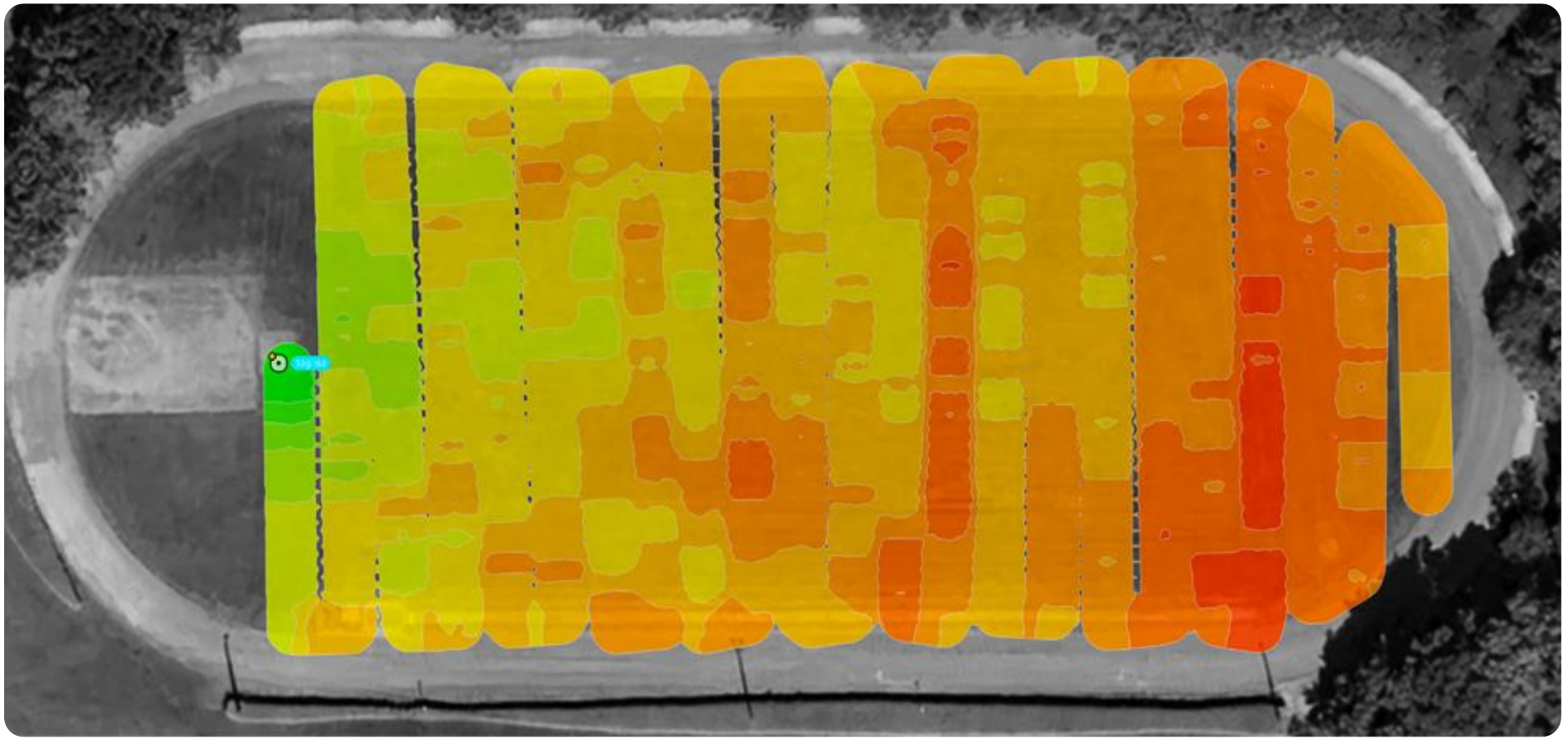
6 Tips - Wi-Fi **Design & Config** Best Practices

1

LCMI

Design for the least capable, most important device in mind

Low Rx sensitivity
Worse Tx capabilities



AHFIBIT BV

6 Tips - Wi-Fi **Design & Config** Best Practices

1

LCMI

Design for the least capable, most important device in mind

Low Rx sensitivity
Worse Tx capabilities



6 Tips - Wi-Fi **Design & Config** Best Practices

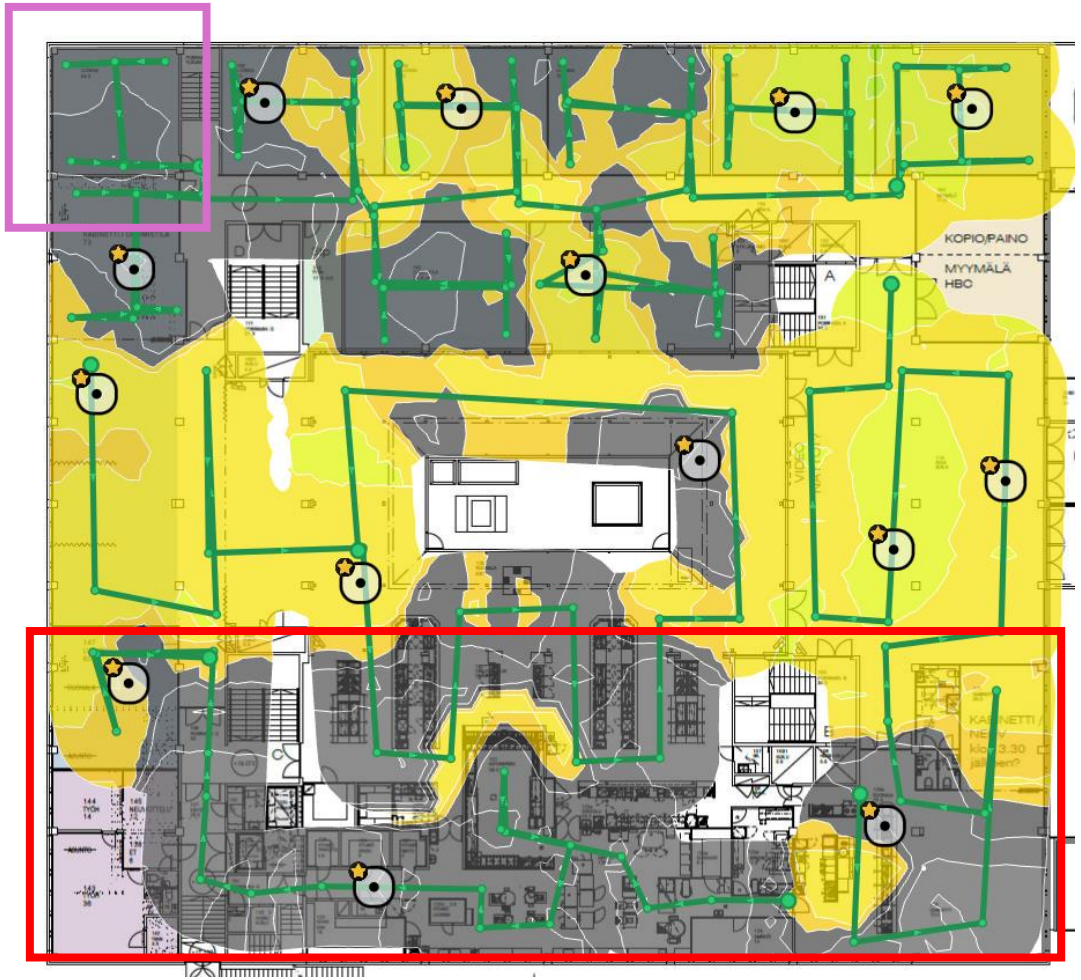
2

SECONDARY COVERAGE

Roaming

Redundancy

Capacity



-85 dBm -67 ≥ -35 dBm

AHFIBIT BV

6 Tips - Wi-Fi **Design & Config** Best Practices

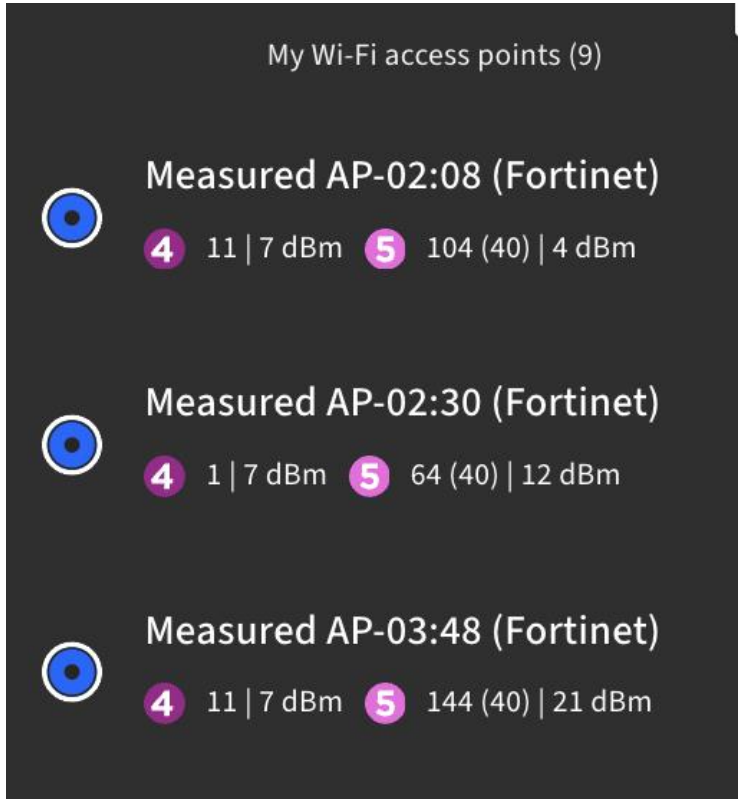
3

TX POWER RANGE

5 & 6GHz
11-20 dBm (EIRP)

Match transmitting capabilities of a client

Set min/max range of between 11-20 dBm



6 Tips - Wi-Fi **Design & Config** Best Practices

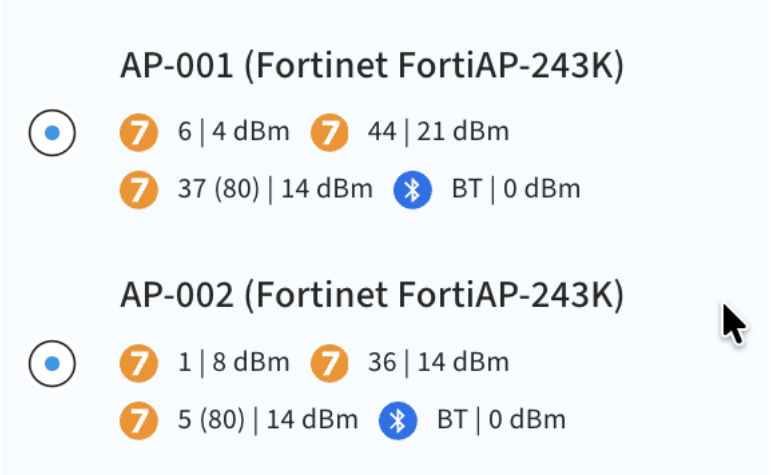
3

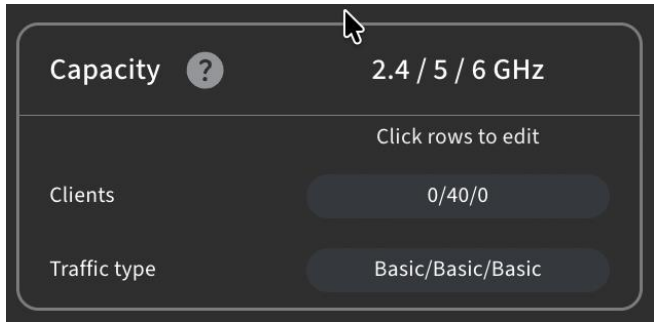
TX POWER RANGE

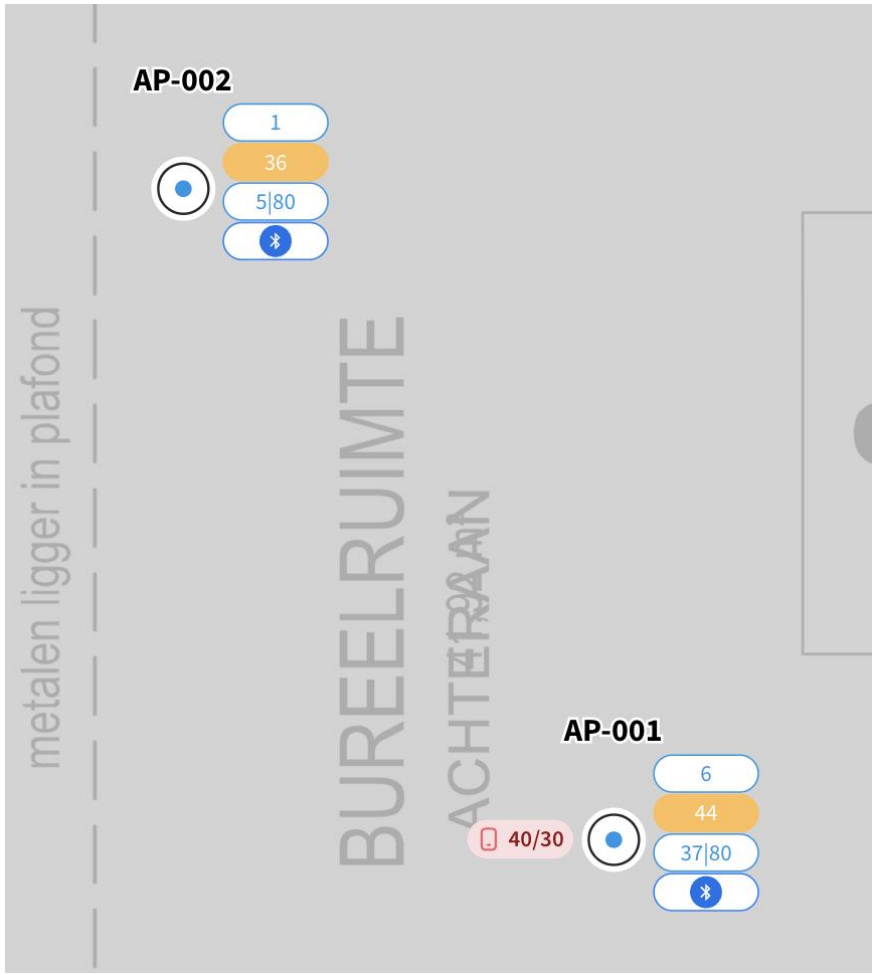
5 & 6GHz
11 -20 dBm (EIRP)

Match transmitting capabilities of a client

Set min/max range of between 11-20dBm







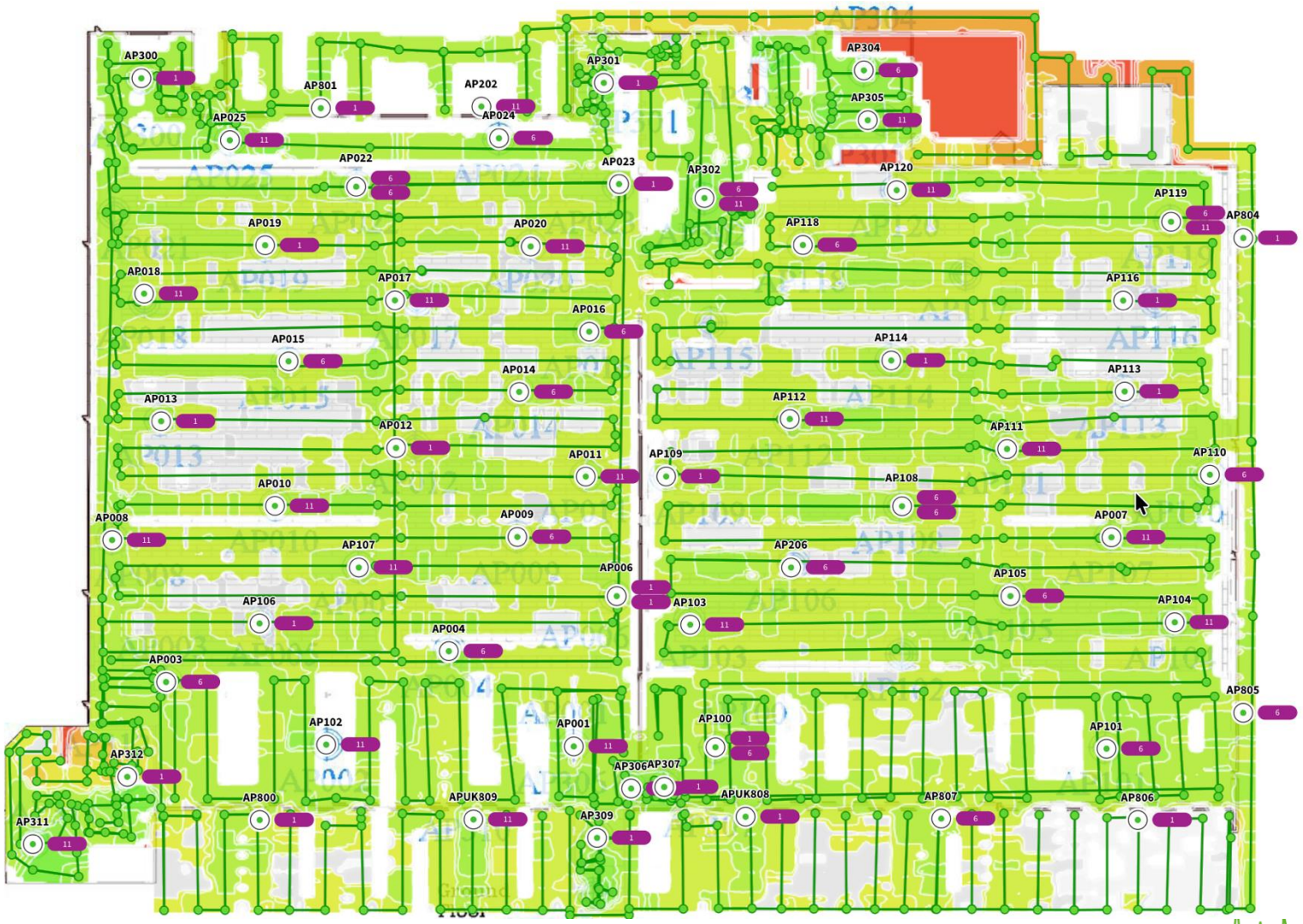
6 Tips - Wi-Fi **Design & Config** Best Practices

4

ANTENNA PATTERN

Check antenna patterns

Pick the right antenna for your use case !



AHFIBIT BV

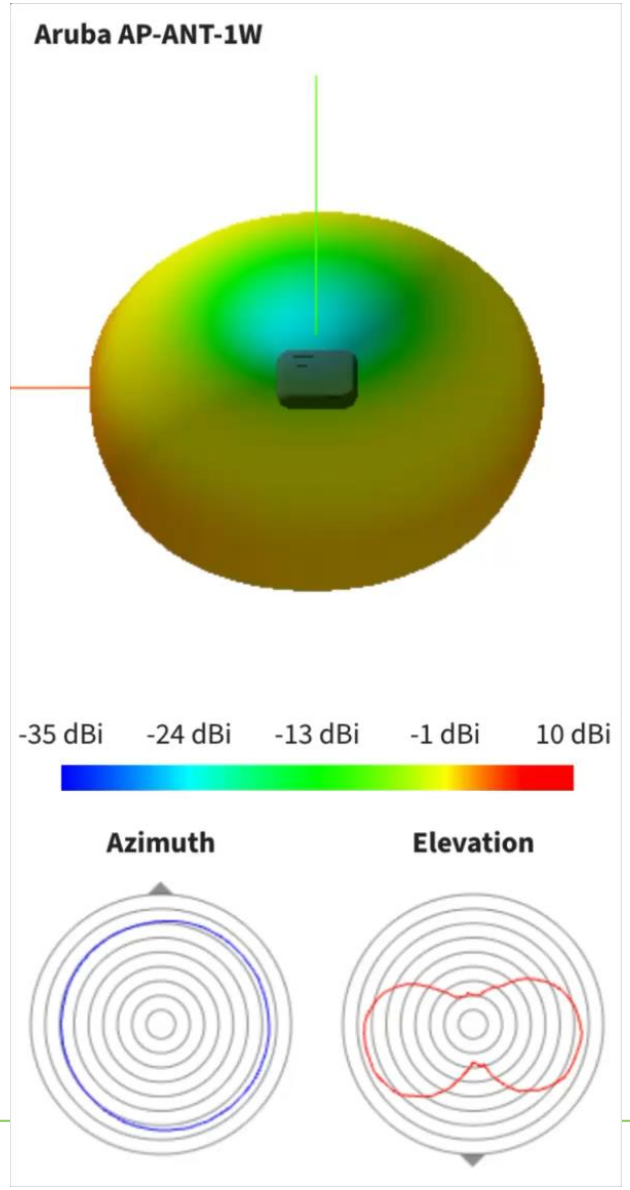
6 Tips - Wi-Fi **Design & Config** Best Practices

4

ANTENNA PATTERN

Check antenna patterns

Pick the right antenna for your use case !





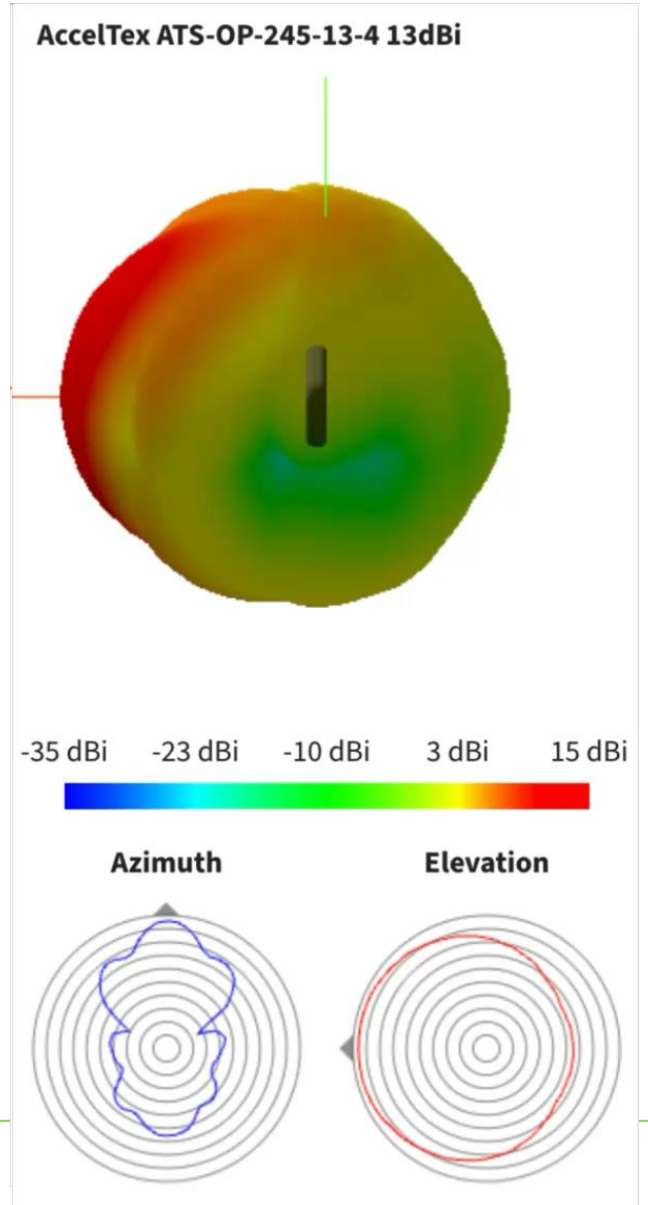
6 Tips - Wi-Fi **Design & Config** Best Practices

4

ANTENNA PATTERN

Check antenna patterns

Pick the right antenna for your use case !





AHFIBIT BV

6 Tips - Wi-Fi **Design & Config** Best Practices

5

AP PLACEMENT

Place the access points where the clients are !

Good RSSI = High SNR = Complex Modulation = High Data Rate











AHFIBIT BV

6 Tips - Wi-Fi **Design & Config** Best Practices

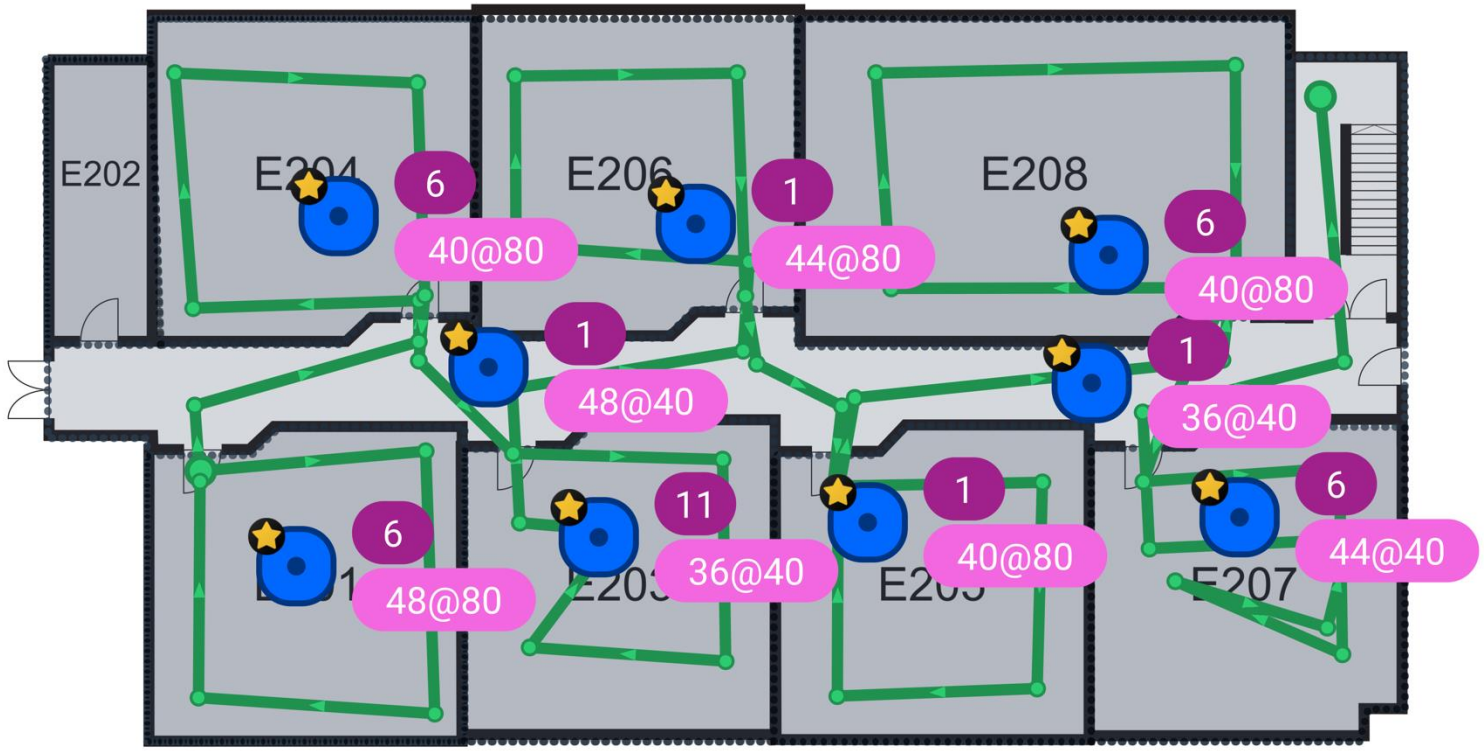
6

RF PROFILE

Provide high data rates

Without having too much channel contention

AIRTIME IS KEY !



AHFIBIT BV

6 Tips - Wi-Fi **Design & Config** Best Practices

6

RF PROFILE

Provide high data rates

Without having too much channel contention

AIRTIME IS KEY !

SSID name	2.4 GHz	5 GHz
ABG-Corp-1	1 Mbps	6 Mbps
ABG-Corp-3	1 Mbps	6 Mbps
ABG-Corp-4	1 Mbps	6 Mbps
ABG-Facilities	1 Mbps	6 Mbps
ABG-iPad		6 Mbps

6 Tips - Wi-Fi **Design & Config** Best Practices

1

LCMI

Design for the least capable, most important device in mind

Low Rx sensitivity
Worse Tx capabilities

2

SECONDARY COVERAGE

Roaming

Redundancy

Capacity

3

TX POWER RANGE

5 & 6GHz
11 - 20 dBm (EIRP)

Match transmitting capabilities of a client

Set min/max range of between 11 -20 dBm

4

ANTENNA PATTERN

Check antenna patterns

Pick the right antenna for your use case !

5

AP PLACEMENT

Place the access points where the clients are !

Good RSSI = High SNR = Complex Modulation = High Data Rate

6

RF PROFILE

Provide high data rates

Without having too much channel contention

AIRTIME IS KEY !

AHFIBIT BV

THANK YOU !!

